

A Systematic Revision of the Genus *Acidiostigma* Hendel (Diptera, Tephritidae) from China, Korea, and Japan

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Abstract The tephritid genus, *Acidiostigma* Hendel is redefined and revised. The nomenclatural status of *Acidiostigma* is clarified with synonymization of *Parahypenidium* Shiraki and *Shiracidia* Ito. A total of 16 Old World species of *Acidiostigma* were recognized in this study, but we restricted the scope of this revision to the species from China, Korea, and Japan because of unavailability of the type materials from Taiwan and India. As a result, we provide a key, descriptions, and illustrations for 11 species, of which three are new to science: *A. brevigaster*, *A. cheni*, and *A. omeium*. Brief taxonomic reviews of the remaining five species from other areas are also provided. Systematic position of *Acidiostigma* within the Trypetini is discussed and relationships among included species are inferred using cladistic methods.

Key words Diptera, Tephritidae, Trypetini, *Acidiostigma*, phylogeny

INTRODUCTION

Hendel (1927) initially proposed *Acidiostigma* as a subgenus of *Myoleja* Rondani based on a single new species, *A. longipennis*. Since then, integrity of this taxon has not been clearly established. Chen (1948) placed *Acidiostigma* as a subgenus of *Acidiella* Hendel, but Munro (1935) and Hardy (1968) treated it as a subgenus of *Euleia* Walker. Hardy (1977), later elevated it to genus based on the type species, and listed three species in the Oriental catalog. However, these nomenclatural changes did not accompany any systematic justification.

As a result of examination of over 200 species of the tribe Trypetini, Han (1992, Ph.D. thesis; nomenclatural changes not available until formally published) recognized a monophyletic group of species including *A. longipennis*, the type species of *Acidiostigma*. This monophyletic group was based on the elongated subcostal cell (as a synapomorphy), which also defined a new generic limit of *Acidiostigma*. The majority of recognized species were previously placed in various genera within the tribe Trypetini. *Acidiostigma* spp. are distributed from the Eastern Palaearctic to Oriental Regions and apparently belong to the *Trypeta* genus group, in which only leaf-mining behavior was reported (Han *et al.*, 1993; 1994). At least a single species, *A. polyfasciatum*, are known to breed in leaf mines of *Clerodendron trichomum*

(family Verbenaceae; Ito, 1984).

A total of 16 world species of *Acidiostigma* were recognized in this study, but we restricted the scope of this revision to the species from China, Korea, and Japan because of unavailability of the type materials from Taiwan and India. As a result, we described 11 species, of which three were new to science. Brief taxonomic reviews of the remaining five species from other areas are also provided. Systematic position of *Acidiostigma* within the tribe Trypetini is discussed and relationships among included species are inferred using cladistic methods.

The terminology and morphological interpretations used in this paper follow McAlpine (1981) and Foote and Steyskal (1987). In addition, other references were followed for ratios (Han, 1996), wing bands (Foote *et al.*, 1993; see also Fig. 2C), and thoracic stripes (modified from Stoltzfus, 1988; see also Fig. 4A).

Acronyms for the depositories of specimens listed in the text are as follows: HUS, Entomological Institute, Hokkaido University, Sapporo 060, Japan; IZAS, Institute of Zoology, Academia Sinica, Beijing 100080, China; KNU, Department of Agricultural Biology, Kyungpook National University, Taegu 635, Korea; MNHP, National Collection of Insect, Museum National d'Histoire Naturelle, 45 rue Buffon, Paris 75005, France; MZIU, Museum of Zoology and Entomology, Lund University, 62 Lund, Sweden; NHMB, Naturhistorisches Museum Basel, CH-4001 Basel, Switzerland; NRS, Swedish Museum of Natural History, S-104 05 Stockholm, Sweden; NTUC, Entomological Museum, Department of Zoology-Entomology, National Taiwan University, Taipei, Taiwan; UHH, Department of Entomology, University of Hawaii, Honolulu, HI 96822, USA; UOP, Entomological Laboratory, University of Osaka Prefecture, Osaka 591, Japan; USNM, Systematic Entomology Lab., U.S. National Museum of Natural History, Washington, DC 20560, USA; ZSIC, National Zoological Collection, Zoological Survey of India, Calcutta 700 012, India.

RELATIONSHIPS

Monophyly of *Acidiostigma* and Relationships to Other Taxa

Han (1992, 1997) recognized a monophyletic group of 13 leaf-mining genera (as *Trypeta* group of the subtribe Trypetina), which included *Acidiostigma*. However, relationships of *Acidiostigma* to the other *Trypeta* group genera are not clear. Some *Acidiostigma* species have predominantly dark wing patterns (cf. Fig. 4A) as in most species of *Hemilea* Loew, suggesting a possible relationship between these two genera. However, value of this character at generic level is questionable because tephritid wing patterns are often highly variable even within a single well defined genus while strikingly similar wing patterns appear repeatedly in distantly related taxa by convergence (Han, 1996). We were not able to recognize any additional synapomorphy to support the relationship between *Acidiostigma* and *Hemilea*.

Monophyly of *Acidiostigma* is supported by a single synapomorphy; wing cell sc elongated with subcostal-costal ratio at least 0.9 in males (plesiomorphy: subcostal-costal ratio less than 0.8). The synapomorphic state is unique within the tribe Trypetini, but occasionally found in other distantly related tephritid taxa such as *Toxotrypana* spp. For the species with both sexes are examined, the ratios are

distinctly higher in males except in *A. amoenum* (Figs 2B-C). Within *Acidiostigma*, extent of the elongation is quite variable interspecifically, showing subcostal-costal ratio up to 2.5 in *A. brunneum* (Fig. 5A).

Relationships within *Acidiostigma*

To postulate phylogenetic relationships among *Acidiostigma* species, we selected 14 interspecifically variable characters after excluding possible autapomorphies for each species (Table 1). Since there are no clear sister-group relationships established, we determined evolutionary character polarities based on the character state distribution among the genera of the *Trypeta* group. As a result, ancestral states were hypothesized only for six characters, whose evolutionary character polarities were relatively clear (Table

Table 1. Characters and character states used in the cladistic analysis of *Acidiostigma* spp.

1. Subcostal costal ratio in male: (a) less than 1; (b) 1.1-1.8; (c) greater than 2.
2. Number of frontal setae: (a) 3 pairs; (b) 4-5 pairs.
3. Color of facial plate: (a) uniformly pale yellow to yellow brown; (b) upper 2/3-3/4 brown to dark brown.
4. Color of labial palpal setulae: (a) brown to dark brown; (b) pale yellow.
5. Color of postgenal seta: (a) dark brown; (b) yellow brown to brown.
6. Color pattern of scutum: (a) entirely yellow brown to orange brown; (b) with 2 pairs of dark brown longitudinal stripes; (c) entirely dark brown.
7. Anatergite: (a) entirely pale brown to yellow brown; (b) posteriorly dark brown; (c) entirely dark brown.
8. Mediotergite: (a) yellow brown; (b) largely dark brown.
9. Setulae on R4+5 between node and r-m crossvein: (a) less than 15; (b) more than 18.
10. Preabdominal sternites: (a) narrow; (b) wide, leaving only narrow stripe of pleural membrane in ventral view.
11. Aedeagal apodeme: (a) broad fan shape; (b) narrow.
12. Wing cell r2+3: (a) with some hyaline area; (b) almost entirely dark.
13. Abdominal tergite 3: (a) yellow brown; (b) entirely or largely brown to dark brown, contrasting well with paler tergite 1+2.
14. Abdominal tergite 4 in male: (a) yellow brown; (b) entirely or largely brown to dark brown, contrasting well with paler tergite 1+2.

Table 2. Character state distribution of characters used in the cladistic analysis of *Acidiostigma*. ? = uncertain state.

Taxa / Characters	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Hypothetical ancestor	a	a	a	?	?	?	?	?	a	a	a	?	?	?
<i>A. amoenum</i>	a	a	a	b	b	a	a	a	a	a	a	a	a	a
<i>A. postsignatum</i>	a	a	a	b	b	a	a	b	a	a	b	a	a	a
<i>A. longipennis</i>	b	a	a	a	a	a	a	a	a	a	a	a	a	b
<i>A. s-nigrum</i>	a	b	a	a	a	a	b	b	a	b	a	a	a	a
<i>A. brunneum</i>	c	a	a	a	a	a	a	a	a	b	b	b	a	b
<i>A. omeium</i>	b	a	a	a	a	b	b	b	a	b	?	b	b	?
<i>A. nigrutum</i>	c	b	a	a	a	b	b	b	a	b	a	b	b	b
<i>A. cheni</i>	b	a	a	a	a	b	b	b	a	a	b	b	b	b
<i>A. brevigaster</i>	b	a	a	a	a	b	b	b	a	a	a	b	b	b
<i>A. voilaceum</i>	b	a	b	a	a	c	c	b	b	b	b	b	b	b
<i>A. polyfasciatum</i>	b	a	b	b	b	b	b	b	b	a	a	b	b	b

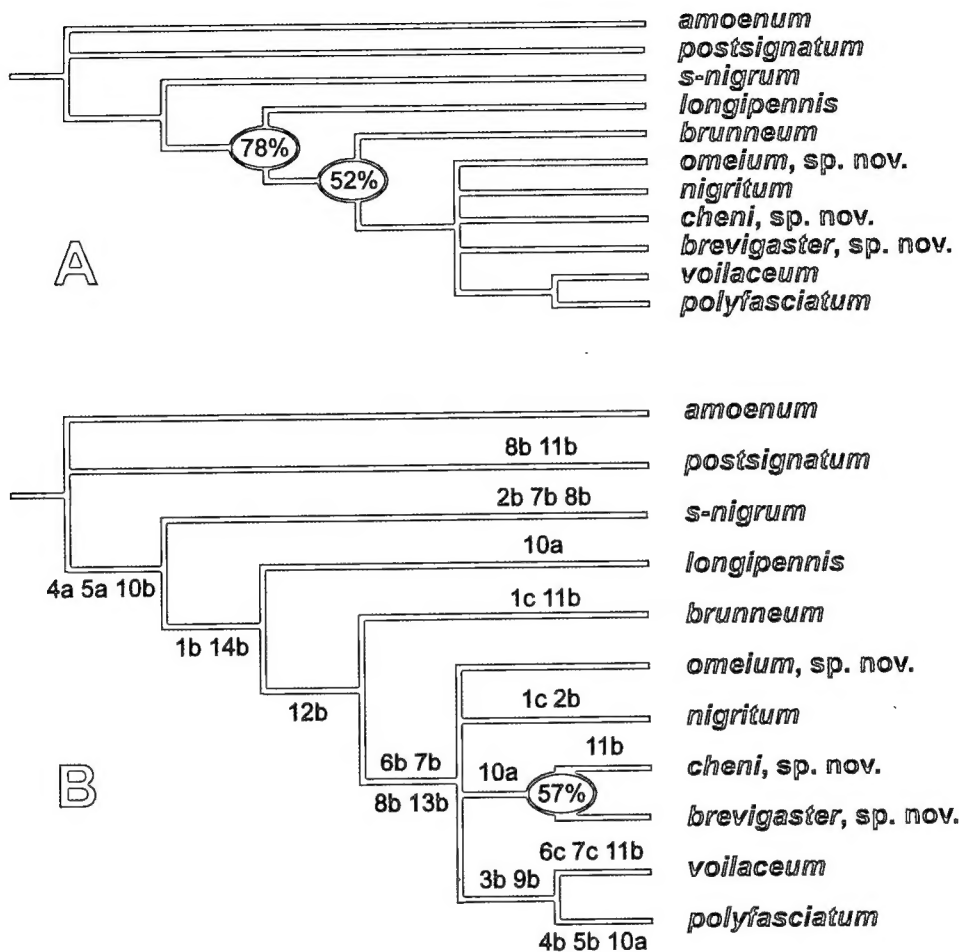


Fig. 1. Cladograms of *Acidiosigma*. Numbers on nodes indicate % consensus values. Nodes without numbers are supported by 100% of most parsimonious (MP) trees. (A) Majority rule consensus tree of 54 MP trees based on the equally weighted characters. Statistics of each MP tree: tree length = 30, consistency index = 0.567, homoplasy index = 0.433, retention index = 0.629, rescaled consistency index = 0.356. (B) Majority rule consensus tree of 14 MP trees found after successive weighting. Characters were reweighted by maximum value of rescaled consistency indices. Numbers and letters on branches refer to characters and states representing hypothesized apomorphic changes.

2). All the characters states were considered unordered and equally likely for both forward and backward changes. A branch-and-bound search using PAUP (Swofford, 1993) recovered 54 most parsimonious trees, and a 50% majority rule consensus tree is shown in Fig. 1A. Successive weighting by maximum values of rescaled consistency indices recovered 14 most parsimonious trees, whose consensus tree is almost identical to the consensus tree from the equally weighted analysis (Fig. 1B). The ACCTRAN character optimization option was used to hypothesize characters state changes for this cladogram.

As suggested by the low consistent index and the high homoplasy index (Fig. 1A), characters state evolution within *Acidiosigma* may have been highly homoplastic. Even if we assume the parsimony tree

as true phylogeny, there are only three characters (Chrs 3, 9, 13), which do not require to hypothesize homoplasy. Our phylogenetic hypothesis, nevertheless, does provide interesting insights about the character evolution within *Acidiostigma*.

A sister group relationship between *A. voilaceum* and *A. polyfasciatum* is clearly supported by two non-homoplastic synapomorphies (Chrs 3, 9). These two character statuses are not only unique within *Acidiostigma* but also absent in any other *Trypeta* group taxa so far as examined. This sister group relationship, however, does require six homoplasies on the terminal branches.

Monophyly of six species including *A. omeium* to *A. polyfasciatum* is supported in both equally weighted and weighted trees based on four synapomorphies (Figs 1A-B). A sister group relationships between this group and *A. brunneum* is also suggested based on a single synapomorphy (entirely dark wing cell r2+3). These seven species have extensively dark wing patterns, which are strikingly similar to those of *Hemilea* spp.

Genus *Acidiostigma* Hendel, 1927

Acidiostigma Hendel 1927: 101. Type-species: *Myiolia* (*Acidiostigma*) *longipennis* Hendel, by monotypy, proposed as a subgenus of *Myiolia* (= *Myoleja*).

Parahypenidium Shiraki 1933: 203. Type-species: *Hypenidium polyfasciatum* Miyake, by original designation, **syn. nov.**

Euleia (*Acidiostigma*); Munro 1935: 22.

Acidiella (*Acidiostigma*); Chen 1948: 76.

Shiracidia Ito 1984: 111. Type-species: *Trypeta s-nigrum* Matsumura, by original designation, **syn. nov.**

Diagnosis. Majority of *Acidiostigma* species may be easily confused with *Hemilea* spp., which also have predominantly dark wing pattern. *Acidiostigma* species, however, can be distinguished from *Hemilea* and other members of the tribe Trypetini by their elongated cell sc, especially in male; subcostal-costal ratios are at least 0.9 in *Acidiostigma* males, but less than 0.8 in other trypetine taxa.

Description. Body pale yellow to dark brown with dark brown setae; wing length 6.5-8.7 mm. Head yellow brown with frontal head ratio 0.30-0.39, eye ratio 0.72-0.88, genal-eye ratio 0.10-0.30; 1 inner vertical, 1 outer vertical, 1 postocellar, 1 paraverticlar, 1 ocellar, 2 orbital setae; usually 3 frontal setae but 4-5 frontal setae in *nigrum* and *s-nigrum*; parafacial 0.2-0.4x as wide as flagellomere 1; genal seta strong; postgena swollen with pale to dark brown setulae; mouth parts short; maxillary palpi with pale to dark brown setulae. Thorax yellow brown to dark brown with 1 postpronotal, 2 scapular, 1 acrostichal, 1 dorsocentral, 1 intra-alar, 1 presutural supra-alar, 1 postsutural supra-alar, 1 postalar, 2 notopleural, 2 scutellar, 2 anepisternal, 1 anepimeral, 1 katepisternal setae; dorsocentral setae 0.5-0.9x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum with apical setae parallel or slightly divergent each other, slightly shorter than basal setae. Legs pale yellow to yellow brown with dark brown setulae. Fore femur with 5-8 posteroventral setae. Wing with cell sc more than 1.5x as long cell c in males of most species; section between bm-cu and r-m 0.5-0.7x as long as section between r-m

and dm-cu; cup extension short; wing pattern variable. Preabdomen slightly longer than or as long as wide; sternites widened in some species (as in Fig. 5F).

Male genitalia with subapical prensiseta much smaller than apical prensiseta; distiphallus with median granulate sclerite large; dorsal sclerite with pattern of narrowly oblong cells; apicodorsal rod present.

Female postabdomen with oviscape without any outstanding marginal setae; eversible membrane medially with strong triangular teeth, posteriorly with smaller triangular teeth; aculeus wide, apically tapering with lateral serration except for *A. longipennis*; 3 spermathecae round to widely ovate in outline with lateral spinular pattern; apical portion of spermathecal duct slightly swollen. Eggs narrowly elliptic in outline with tiny micropylar end.

Biology. Larvae of *A. polyfasciatum* are known to mine the leaves of *Clerodendron trichomum*, a member of Verbenaceae (Ito 1984). All other *Acidiostigma* species are likely to be leaf-miners as other taxa of *Trypeta* group.

Distribution. Oriental to eastern Palearctic Regions.

Key to the Species of *Acidiostigma* Hendel

1. Dark wing pattern almost entirely covering anterior of vein M (as in Fig. 4A) 2
 Dark wing pattern not as above 8
2. Scutellum dark brown *A. voilaceum*
 Scutellum entirely yellow brown 3
3. Scutum entirely yellow brown *A. brunneum*
 Scutum with dark brown longitudinal stripes 4
4. With 4 or more pairs of frontal setae (Fig. 10C) *A. nigrum*
 With 3 pairs of frontal setae 5
5. Scutum with submesal stripes much narrower than space between them (Figs 11A, 12A) 6
 Scutum with submesal stripes much wider than space between them (Figs 7A, 4A) 7
6. Wing cell r4+5 with some hyaline area (Figs 12A-B) *A. polyfasciatum*
 Wing cell r4+5 entirely dark brown (Fig. 11A) *A. omeium*, sp. nov.
7. Mediotergite entirely dark brown; scutum with submesal stripes wide, nearly touching each other (Fig. 7A) *A. cheni*, sp. nov.
 Mediotergite dark brown with narrow yellow brown longitudinal stripe; scutum with submesal stripes separated each other by yellow brown area (Fig. 4A) *A. brevigaster*, sp. nov.
8. With 4 or more pairs of frontal setae (Fig. 15A); wing pattern with anterior apical and subapical bands together forming characteristic S-shaped band (Figs 15B-C) *A. s-nigrum*
 With 3 pairs of frontal setae; wing pattern not as above 9
9. Mediotergite dark brown except for yellow brown median longitudinal stripe *A. postsignatum*
 Mediotergite entirely yellow brown 10
10. Wing pattern with narrow subapical band connected to discal band; cell c longer than cell sc, much more so in male (Figs 8A-B) *A. longipennis*
 Wing pattern with very faint or no subapical band; cell c shorter than cell sc without showing sexual

dimorphism (Figs 2B-C) *A. amoenum*

***Acidiostigma amoenum* Wang, 1990**

(Figs 2A-F, 3A-G)

Acidiostigma amoena Wang 1990b: 315 (see Type Material).

Diagnosis. This species is distinguished from other *Acidiostigma* species by its wing pattern (Figs 2B-C): 1) with very faint or no subapical band; 2) discal band clearly separated from anterior apical band.

Description. Body almost entirely yellow brown with dark brown setae; wing length 8.0-8.4 mm. Head (Fig. 2A) yellow brown with frontal-head ratio 0.36-0.39, eye ratio 0.81-0.88, genal-eye ratio 0.23-0.29; inner vertical seta 0.7-0.8x as long as longest diameter of eye; outer vertical seta 0.7x as long as inner vertical setae; post ocellar seta 0.4x as long as inner vertical seta; paraverticlar seta 0.7x as long as

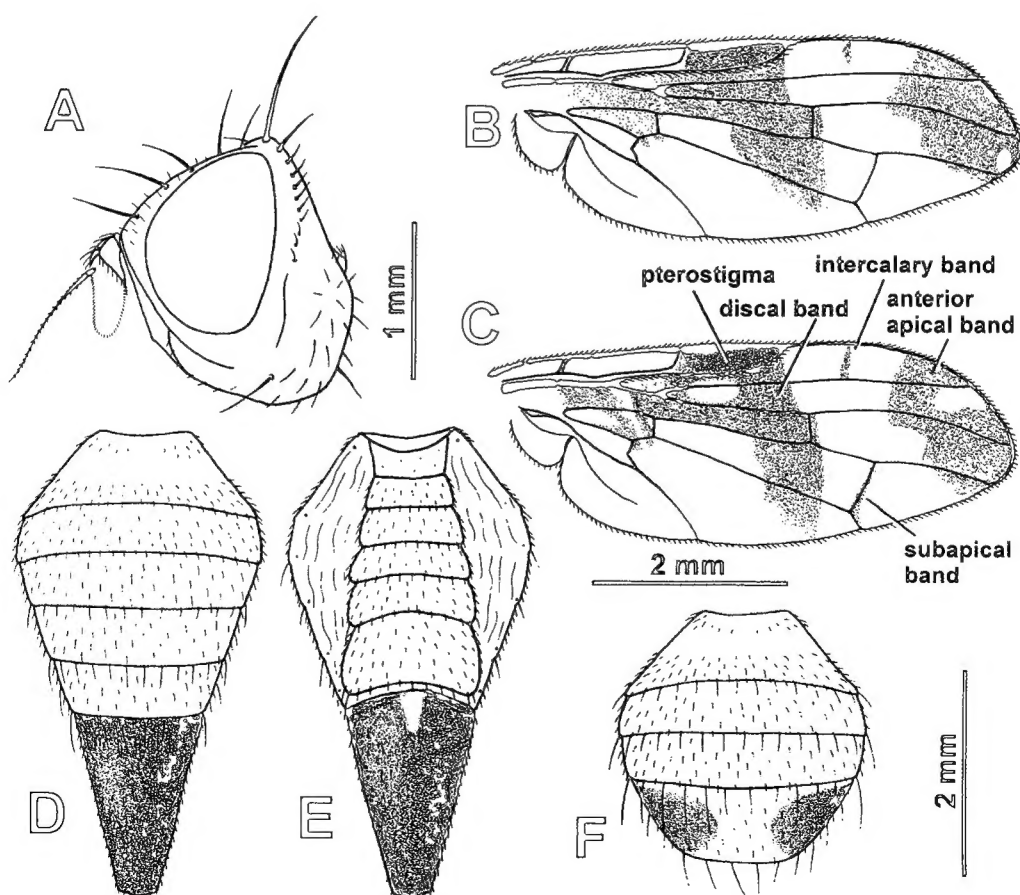


Fig. 2. *Acidiostigma amoenum* Wang: (A) head, lateral view; (B) wing, ♂; (C) wing, ♀; (D) abdomen, dorsal view, ♀; (E) abdomen, ventral view, ♀; (F) abdomen, dorsal view, ♂.

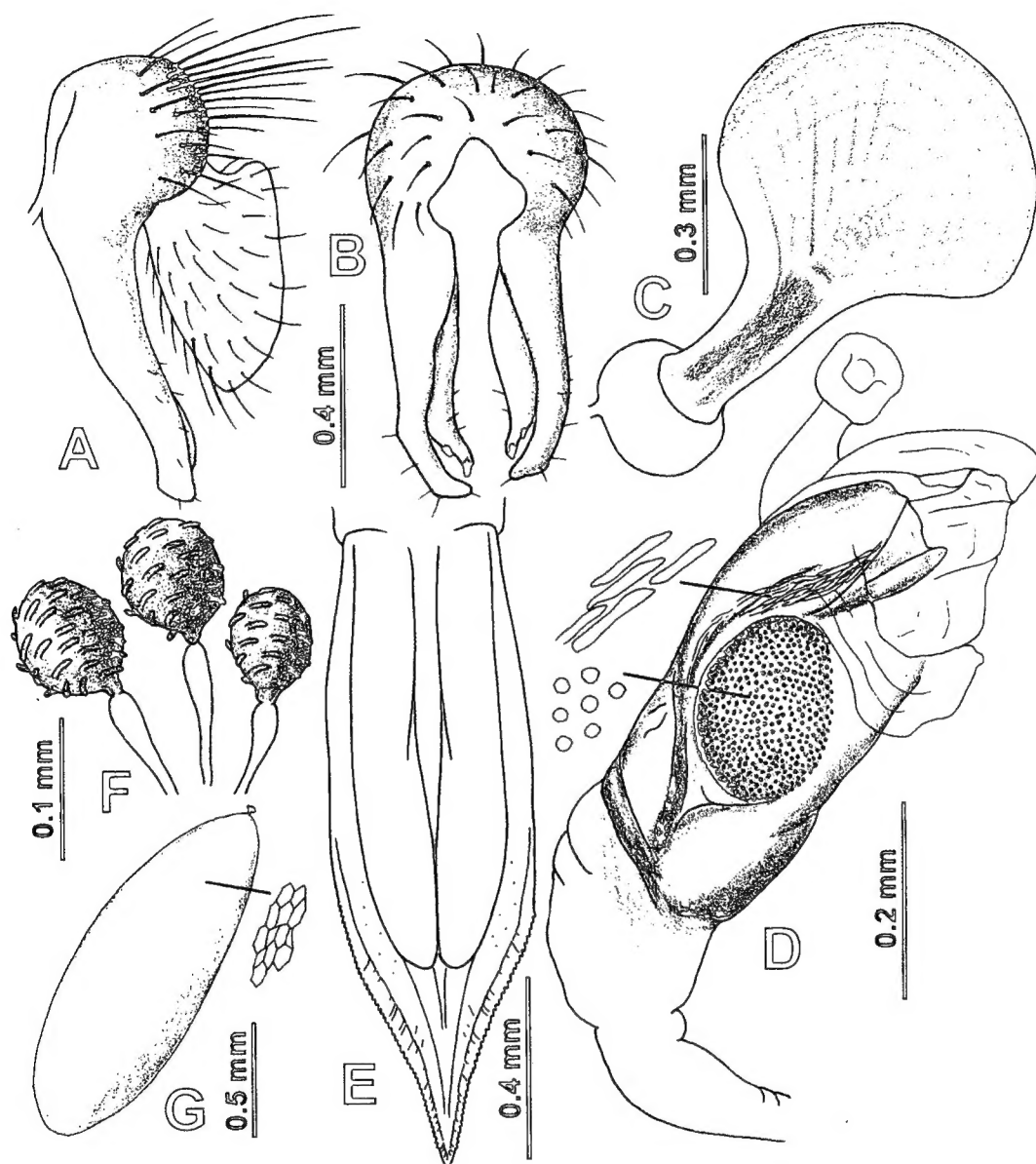


Fig. 3. *Acidiostigma amoenum* Wang: (A) epandrial complex, lateral view; (B) epandrial complex, posterior view (cercus removed); (C) ejecutory apodeme; (D) distiphallus, laterodorsal view (insets about 7x of original figure); (E) aculeus; (F) spermathecae; (G) egg.

post ocellar seta; ocellar triangle dark brown; ocellar seta hairlike, 2-2.5x as long as ocellar triangle; 2 orbital setae; 3 frontal setae; antenna with arista-antenna ratio 1.5-1.8; scape and pedicel with dark brown setulae; arista short pubescent; face entirely yellow brown, slightly projecting beyond anterior margin of parafacial and facial ridge; parafacial about 0.3x as wide as flagellomere 1; genal seta strong, dark brown; postgena strongly swollen with long brown setulae; postocular setae extend 0.6x distance

from upper eye margin to lower eye margin; maxillary palpi with pale setulae. Thorax subshiny, entirely yellow brown with dark brown setae and setulae; dorsocentral setae about 0.5x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum with basal setae 1.7x as long as scutellum, and apical seta 1.5x as long as scutellum; proepisternum densely covered with long pale setulae; anepisternum with single outstanding seta plus much smaller seta underneath; mediotergite shiny, yellow brown. Legs entirely yellow brown with dark brown setae and setulae; fore femur with 5-6 posteroventral setae. Wing (Figs 2B-C) with wing-thorax ratio 2.7-2.8, vein R4+5 ratio 1.4-1.5, vein M ratio 0.38-0.43, subcostal-costal ratio 0.92-1.0 in male and 0.96-1.0 in female; R4+5 with about 10 tiny setulae between node and r-m, no setulae beyond r-m; bc and c hyaline; with wide dark brown discal band from pterostigma to br, then covering from apical half to 1/5 of dm and slightly beyond CuA1; r2+3 basally with small hyaline spot in some specimens; small intercalary band on r1; large anterior apical band covering apex of br, 1/3 of r2+3, 1/2 of r4+5, and slightly beyond R4+5; apex of r2+3 and r4+5 each with varying size of small hyaline spot.

Male abdomen (Figs 2F, 3A-D) as long as wide, shiny with dark brown setae and setulae; tergite 1-4 entirely yellow brown; tergite 5 with pair of large brown sublateral specks; preabdominal sternites yellow brown, not widened; epandrium yellow brown with dark brown setae; surstylus yellow brown, apically truncated in lateral view; inner surstylus with subapical prensiseta much smaller than apical prensiseta; aedeagal apodeme wide, fan-shaped; distiphallus with distinct apicodorsal rod; median granulate sclerite approximately elliptic in outline, about 0.3x as long as distiphallus; lower 1/3 of dorsal sclerite with pattern of closely approximate narrowly oblong cells.

Female abdomen (Figs 2D-E, 3E-F) with preabdomen slightly longer than wide; tergite 1-6 entirely yellow brown with dark brown setae and setulae; oviscape entirely dark brown without any outstanding marginal setae; preabdominal sternites narrow; eversible membrane with taeniae about 0.5x as long as membrane, medially with strong triangular teeth, posteriorly with smaller triangular teeth; aculeus wide, parallel-sided, apical 2/5 tapered with fine lateral serrations; 3 ovate spermathecae brown with transverse spinular pattern, apical portion of spermathecal duct slightly swollen. Egg (Fig. 3G) narrowly elliptic in outline with tiny micropylar end.

Type Material. Holotype ♂ (IZAS), CHINA: Sichuan, Nanping, 3000 m, 3.IX.1981, S.-Y. Wang; in good condition except for collapsed right compound eye. Allotype ♀ (IZAS), Sichuan, Wolong, 2500 m, R.-Q. Wang. Paratypes: same data as holotype, 1 ♂; Sichuan, Mt Omei, 1800-2000 m, 2 ♀ (IZAS).

Other Material Examined. Sichuan, Mt Omei, 1800-2000 m, 1 ♂ (IZAS).

Distribution. China: Sichuan.

***Acidiostigma brevigaster* Han and Wang, sp. nov.**

(Figs 4A-G)

Diagnosis. This species is superficially similar to *A. cheni*, but can be distinguished by less extensive dark pattern on the scutum (Fig. 4A vs. Fig. 7A). In addition, *A. brevigaster* has a small brown posterior mesal spot on the cell dm, while *A. cheni* doesn't. However, consistency of this character needs to be confirmed with additional specimens.

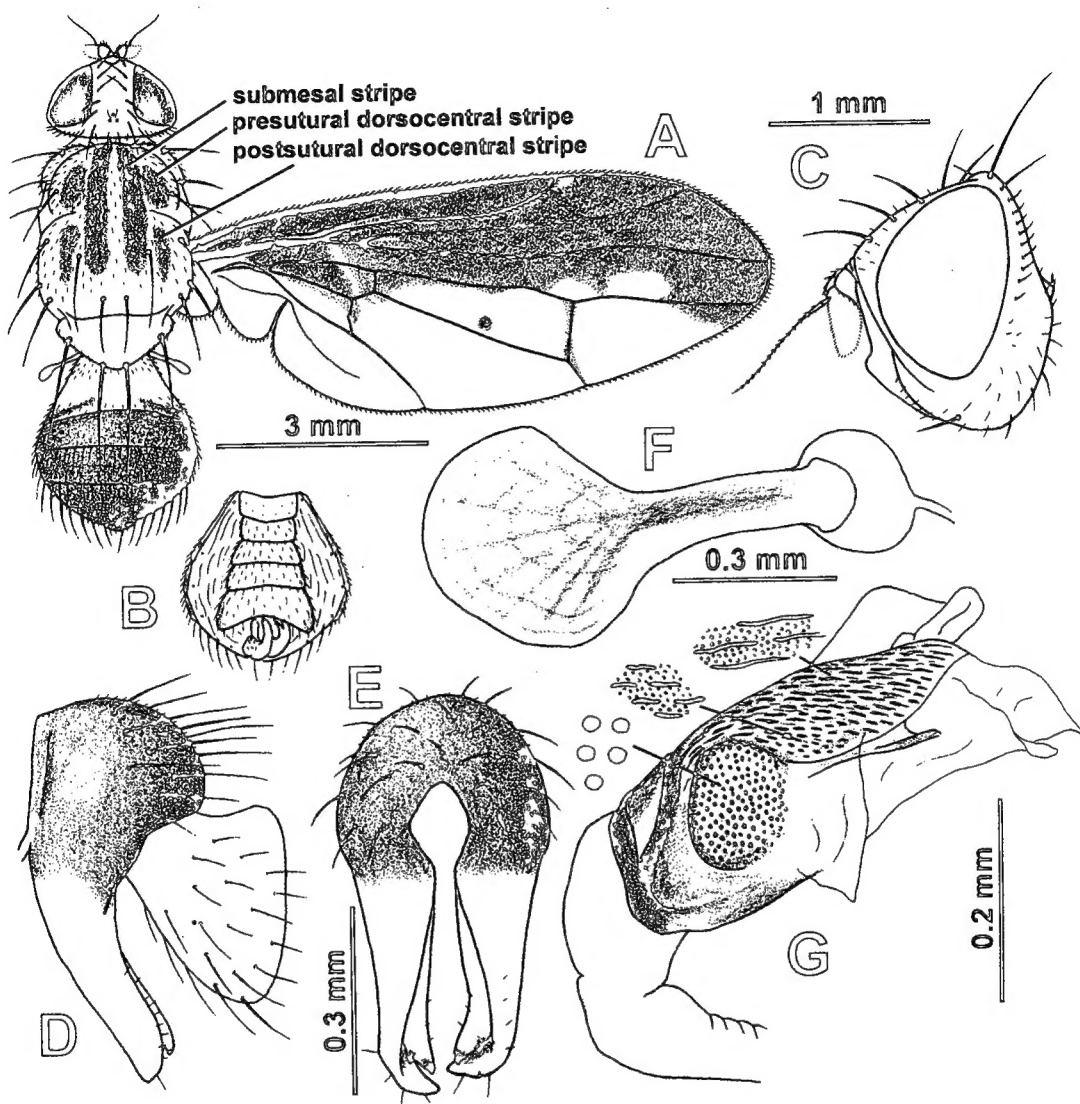


Fig. 4. *Acidistigma brevigaster* Han & Wang, sp. nov.: (A) body, dorsal view, ♂; (B) abdomen, ventral view, ♂; (C) head, lateral view; (D) epandrial complex, lateral view; (E) epandrial complex, posterior view (cercus removed); (F) ejaculatory apodeme; (G) distiphallus, laterodorsal view (insets about 7x of original figure).

Description. Body yellow brown to brown ground color with dark brown pattern; wing length 8.3 mm. Head (Figs 4A, C) entirely yellow brown with frontal-head ratio 0.35, eye ratio 0.74, genal-eye ratio 0.19; chaetotaxy mostly missing from only available specimen; 2 pairs of orbital setae; 3 pairs of frontal setae; antenna with arisal-antennal ratio 1.4; scape and pedicel with dark brown setulae; arista short pubescent; face projecting beyond anterior margin of parafacial and facial ridge; parafacial 0.3x as wide as flagellomere 1; lower margin of gena with relatively strong dark brown setulae; genal seta strong, dark brown; postgena strongly swollen with long, dark brown setulae; postocular setae extend 0.7x distance from upper eye margin to lower eye margin; maxillary palpi with dark brown setulae. Thorax (Fig. 4A)

brown to yellow brown ground color with pale yellow stripe from anterior postpronotal lobe, upper 1/4 of anepisternum, to underside of wing base; scutum with dark brown setae and setulae, with wide, dark brown submesal, presutural dorsocentral, and postsutural dorsocentral stripes; dorsocentral setae about 0.7x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum flat, almost bare; scutellum with basal setae 2.2x as long as scutellum and apical setae 1.8x as long as scutellum; proepisternum densely covered with long, fine, pale to brown setulae; anepisternum with 2 strong setae with lower seta slightly shorter than upper seta; mediotergite shiny, dark brown, contrasting well with yellow brown adjacent area. Legs entirely yellow brown with dark brown setae and setulae; fore femur with 5 posteroventral setae. Wing (Fig. 4A) with wing-thorax ratio 2.7, vein R4+5 ratio 1.5, vein M ratio 0.36, subcostal-costal ratio 1.5 (probably much smaller in female); R4+5 with 12 tiny setulae between node and r-m, no setulae beyond r-m; pattern dark brown, almost entirely covering anterior of vein M; r4+5 with 2 large hyaline subbasal and mesal spots posteriorly; dm hyaline with small brown posterior mesal spot.

Male abdomen (Figs 4A-B, D-G) almost as long as wide; shiny with dark brown setae and setulae; tergite 1+2 almost entirely yellow brown except a pair of narrow, dark brown, transverse stripes posteriorly; tergite 3-5 entirely dark brown; preabdominal sternites yellow brown, not widened; epandrium dark brown with dark brown setae, posterodorsally pubescent; surstylus yellow brown; outer surstylus with posterior lobe somewhat reduced, anterior lobe short; inner surstylus with subapical prensiseta much smaller than apical prensiseta; aedeagal apodeme wide, fan shaped; distiphallus with apicodorsal rod; median granulate sclerite approximately round in outline, about 0.2x as long as distiphallus; dorsal sclerite with pattern of narrowly oblong cells in various length; gaps between cell patterns relatively wide with tiny granulation.

Female unknown.

Type Material. Holotype ♂, MYANMAR: Kambaiti, 2000m, 17.V.1934, Malaise; labelled as allotype of *Hemilea malaisei* (NRS); good condition but most setae on head missing; abdomen dissected and kept in a genitalia vial.

Etymology. The specific epithet is derived from the Latin "brevis", meaning short, and "gaster", meaning abdomen, referring unusually short abdomen.

Distribution. Known only from Kambaiti (Myanmar), which is located in the border between Myanmar and Yunnan Province, China.

Remarks. The holotype of *A. brevigaster* was labelled as allotype of *Hemilea malaisei*, which clearly was a misidentification (holotype of *H. malaisei* compared). According to the original description (Hering, 1938), however, *H. malaisei* was described based on two females. Therefore, this specimen appears to have been labelled later as such, either by Hering or other worker.

***Acidiostigma brunneum* (Wang, 1990), comb. nov.**

(Figs 5A-F, 6A-G)

Parahypenidium brunneum Wang 1990a: 226 (see Type Material).

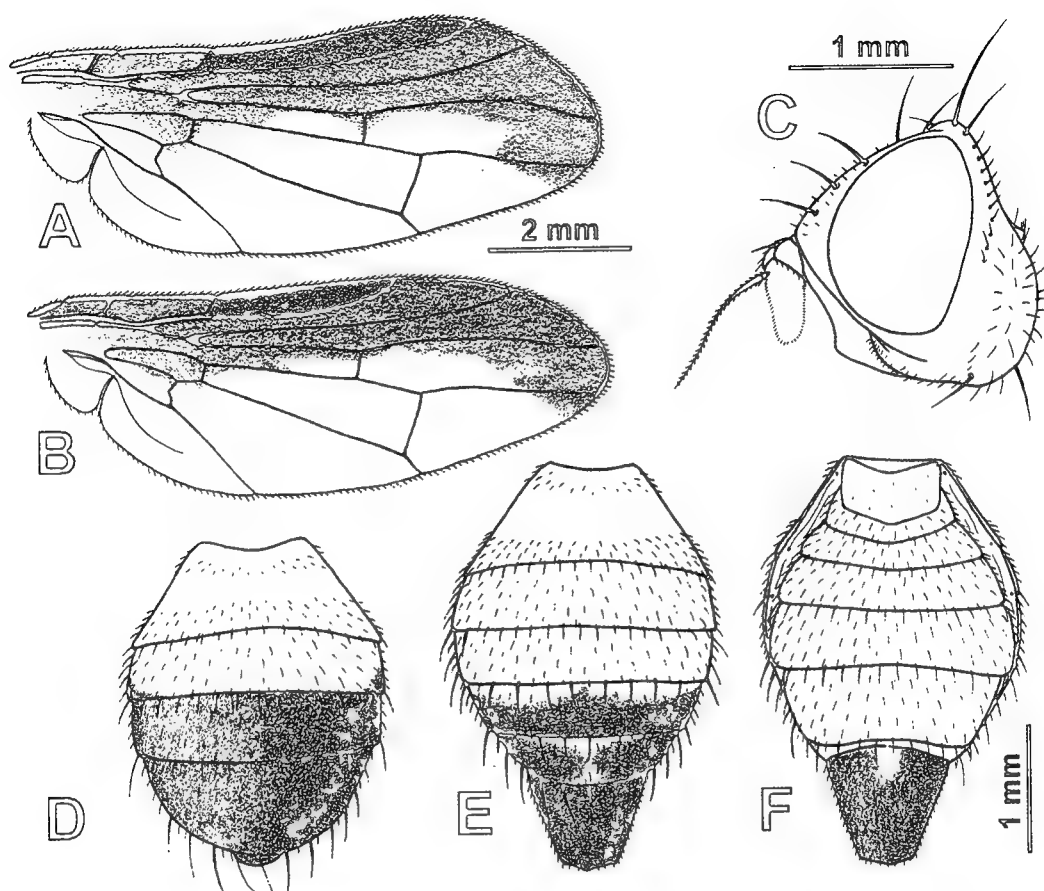


Fig. 5. *Acidiostigma brunneum* (Wang): (A) wing, ♂; (B) wing, ♀; (C) head, lateral view; (D) abdomen, dorsal view, ♂; (E) abdomen, dorsal view, ♀; (F) abdomen, ventral view, ♀.

Diagnosis. This species can be distinguished from other *Acidiostigma* species by its predominantly dark wing patterns (Figs 5A-B) and entirely yellow brown scutum.

Description. Body almost entirely yellow brown with dark brown setae; wing length 7.8-8.3mm. Head (Fig. 5C) yellow brown with frontal-head ratio 0.32-0.34, eye ratio 0.78, genal-eye ratio 0.22; inner vertical seta 0.7-0.8x as long as longest diameter of eye; outer vertical seta 0.6-0.8x as long as inner vertical setae; post ocellar seta 0.3-0.5x as long as inner vertical seta; paraverticlar seta 0.6-0.7x as long as post ocellar seta; ocellar triangle dark brown; ocellar seta hairlike, 1.0-1.2x as long as ocellar triangle; 2 orbital setae; 3 frontal setae; antenna with arisal-antennal ratio 1.5-1.6; scape and pedicel with dark brown setulae; arista short pubescent; face entirely yellow brown, slightly projecting beyond anterior margin of parafacial and facial ridge; parafacial about 0.3x as wide as flagellomere 1; genal seta strong, dark brown; postgena strongly swollen with long dark brown setulae; postocular setae extend 0.6x distance from upper eye margin to lower eye margin; maxillary palpi with dark brown setulae. Thorax subshiny, entirely yellow brown to orange brown with dark brown setae and setulae; dorsocentral setae 0.5-0.7x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum with basal setae

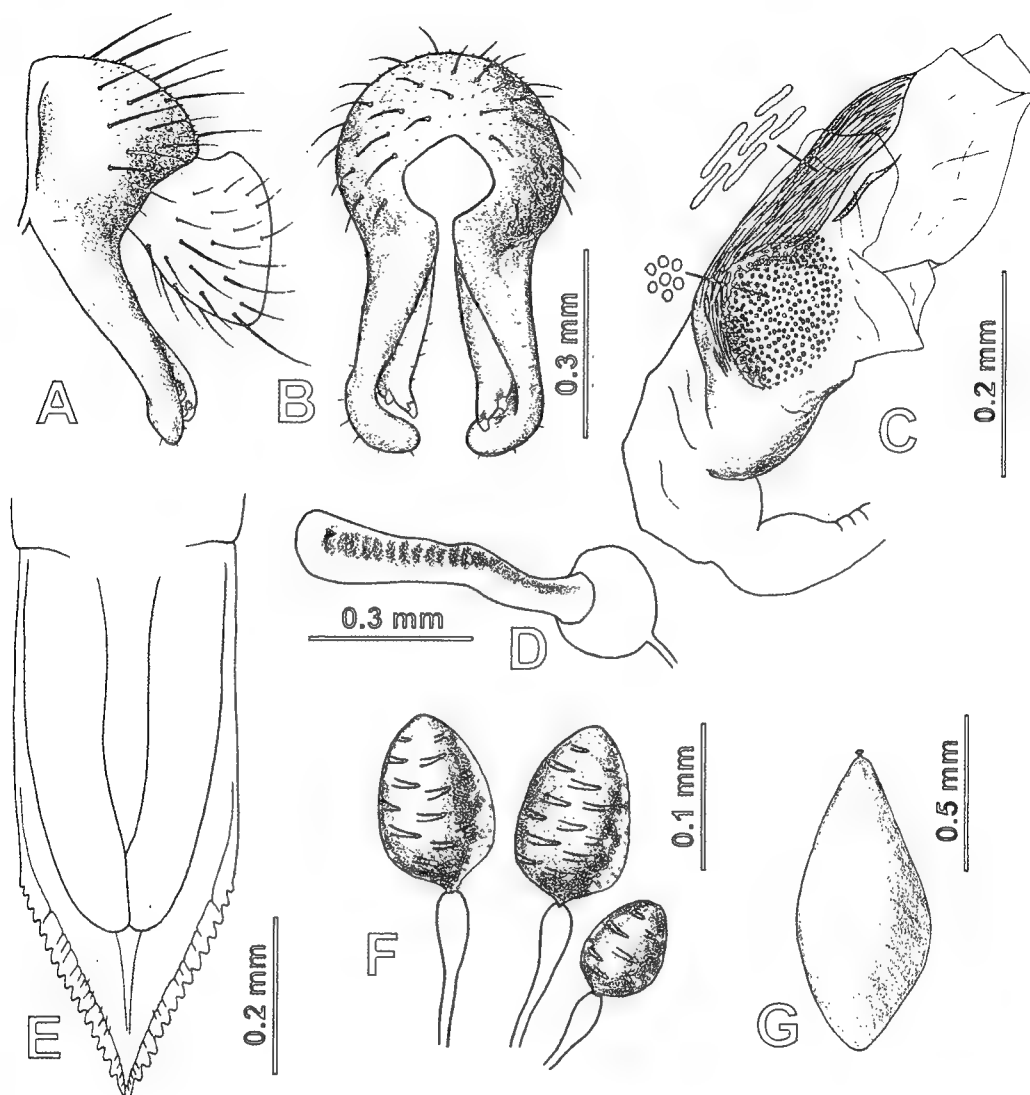


Fig. 6. *Acidiostigma brunneum* (Wang): (A) epandrial complex, lateral view; (B) epandrial complex, posterior view (cercus removed); (C) distiphallus, laterodorsal view (insets about 7x of original figure); (D) ejecutatory apodeme; (E) aculeus; (F) spermathecae; (G) egg.

2x as long as scutellum, and apical seta 1.9x as long as scutellum; proepisternum densely covered with long pale setulae; anepisternum with single outstanding seta plus much smaller seta underneath (distinguished from nearby setulae by its dark color); mediotergite shiny, yellow brown. Legs entirely yellow brown with dark brown setae and setulae; fore femur with 4 posteroventral setae. Wing (Figs 5A-B) with wing-thorax ratio 2.8-3.0, vein R4+5 ratio 1.2-1.5, vein M ratio 0.32-0.42, subcostal-costal ratio 2.6 in male and 1.7 in female; R4+5 with 6-8 tiny setulae between node and r-m, no setulae beyond r-m; pattern dark brown, almost entirely covering anterior of vein M; br postero-apically hyaline;

basal 2/3 of r4+5 hyaline except anterior margin.

Male abdomen (Figs 5D, 6A-D) 1.3x longer than wide; shiny with dark brown setae and setulae; tergite 1-3 entirely yellow brown; tergite 4-5 dark brown; preabdominal sternites yellow brown, widened, leaving only narrow stripe of pleural membrane in ventral view (as in Fig. 5F); epandrium yellow brown with dark brown setae; surstylus yellow brown; inner surstylus with subapical preniseta much smaller than apical preniseta; aedeagal apodeme narrow; distiphallus with apicodorsal rod; apicodorsal rod not conspicuous in lateral view; median granulate sclerite approximately elliptic in outline, about 0.3x as long as distiphallus; dorsal sclerite extensively with pattern of closely approximate narrowly oblong cells.

Female abdomen (Figs 5E-F, 6E-F) with preabdomen 1.3x longer than wide; shiny with dark brown setae and setulae; tergite 1-4 entirely yellow brown; tergite 5 dark brown except narrow anterior margin; tergite 6 dark brown except narrow yellow brown mesal strip; oviscapae entirely dark brown without any outstanding marginal setae; preabdominal sternites yellow brown, widened, leaving only narrow stripe of pleural membrane in ventral view; eversible membrane with taeniae about 0.5x as long as membrane, medially with strong triangular teeth, posteriorly with smaller triangular teeth; aculeus wide, parallel-sided, apical 2/5 tapered with strong lateral serrations; 3 ovate spermathecae brown with transverse spinular pattern, apical portion of spermathecal duct slightly swollen. Egg (Fig. 6G) narrowly elliptic in outline with tiny micropylar end.

Type Material. Holotype ♂ (IZAS), CHINA: Yunnan, Lushui (25°N, 98°E), 28.V.1981, S.Y. Wang. Allotype ♀ (IZAS), Yunnan, Weixi (27°N, 99°E), 22.VII.1981, S.B. Liao.

Distribution. Known only from Yunnan, China.

***Acidiostigma cheni* Han and Wang, sp. nov.**

(Figs 7A-G)

Diagnosis. This species is superficially similar to *A. brevigaster*, but can be distinguished by distinctively more extensive dark pattern on the scutum (Fig. 7A vs. Fig. 4A). Shape of dark brown pattern on abdominal tergite 1+2 further differentiate this species from *A. brevigaster*.

Description. Body yellow brown to brown ground color with dark brown pattern; wing length 6.55 mm. Head (Figs 7A, C) entirely yellow brown with frontal-head ratio 0.30, eye ratio 0.74, genal-eye ratio 0.09; chaetotaxy largely not available from only available specimen; ocellar triangle dark brown; ocellar seta hairlike, 2x as long as ocellar triangle; 2 orbital setae; 3 frontal setae; antenna with arisal-antennal ratio 1.6; scape and pedicel with dark brown setulae; arista short pubescent; face projecting beyond anterior margin of parafacial and facial ridge; parafacial 0.2x as wide as flagellomere 1; lower margin of gena with relatively strong dark brown setulae; genal seta strong, dark brown; postgena strongly swollen with long, dark brown setulae; postocular setae extend 0.6x distance from upper eye margin to lower eye margin; maxillary palpi with dark brown setulae. Thorax (Fig. 7A) yellow brown ground color with dark brown pattern; scutum with dark brown setae and setulae, with wide, dark brown submesal, presutural dorsocentral, and postsutural dorsocentral stripes; dorsocentral setae about 0.8x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum flat, almost bare; scutellum with basal setae 2.2x as long as scutellum and apical setae 2.0x as long as scutellum;

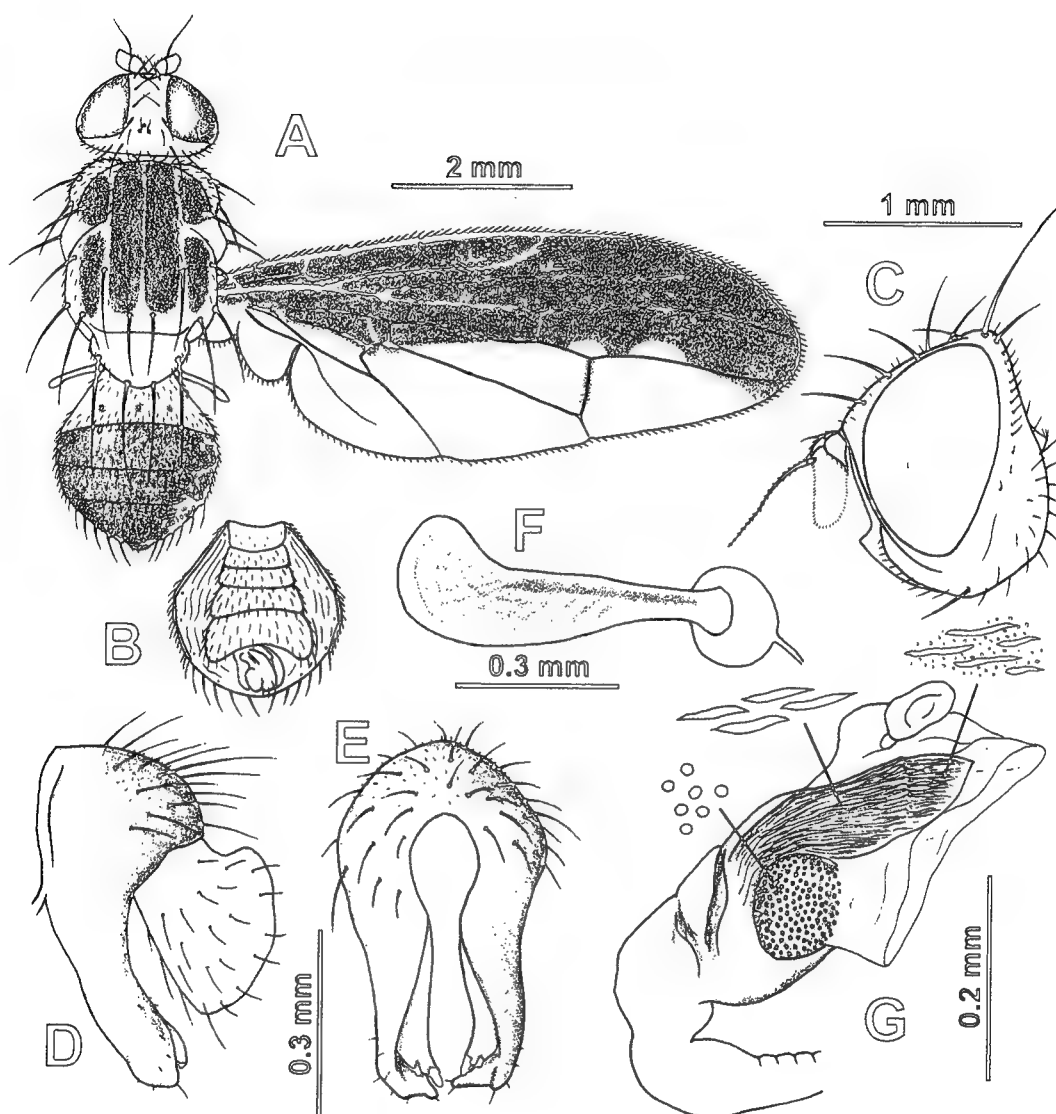


Fig. 7. *Acidiostigma cheni*, sp. nov.: (A) body, dorsal view, ♂; (B) abdomen, ventral view, ♂; (C) head, lateral view; (D) epandrial complex, lateral view; (E) epandrial complex, posterior view (cercus removed); (F) ejaculatory apodeme; (G) distiphallus, laterodorsal view (insets about 7x of original figure).

proepisternum densely covered with long, fine, yellow brown setulae plus few dark brown setulae; anepisternum with 2 strong setae with lower seta 0.7x as long as upper seta; katatergite and anatergite posteriorly dark brown; mediotergite shiny, entirely dark brown, contrasting well with yellow brown adjacent area. Legs entirely yellow brown with dark brown setae and setulae; fore femur with 6 posteroventral setae. Wing (Fig. 7A) with wing-thorax ratio 2.7, vein R4+5 ratio 1.7, vein M ratio 0.40, subcostal-costal ratio 1.1 (probably much smaller in female); R4+5 with 13 tiny setulae between node and r-m, no setulae beyond r-m; pattern dark brown, almost entirely covering anterior of vein M; r4+5

with 2 large hyaline subbasal and mesal spots posteriorly.

Male abdomen (Figs 7A-B, D-G) almost as long as wide; shiny with dark brown setae and setulae; tergite 1+2 almost entirely yellow brown except 3 small mesal and submesal dark brown spots; tergite 3-5 entirely dark brown; preabdominal sternites yellow brown, not widened; epandrium yellow brown with dark brown setae, posterodorsally pubescent; surstylus yellow brown; outer surstylus with both anterior and posterior lobe angulated; inner surstylus with subapical prensiseta much smaller than apical prensiseta; aedeagal apodeme narrow; distiphallus with apicodorsal rod; median granulate sclerite approximately round in outline, about 0.2x as long as distiphallus; dorsal sclerite extensively with pattern of narrowly oblong cells; anteriorly, gaps between cell patterns relatively wide with tiny granulation.

Female unknown.

Type Material. Holotype ♂, CHINA: Sichuan, Mt Omei, 1783m, 28.VI.1957, L.-Y. Zheng (IZAS); left antenna, all frontal setae, and left midleg missing; abdomen dissected and kept in a genitalia vial.

Etymology. This species named after Sichien H. Chen who contributed to the knowledge of Chinese tephritid fauna.

Distribution. Known only from the type locality in China.

***Acidiostigma longipennis* (Hendel, 1927)**

(Figs 8A-F, 9A-G)

Myiolia (Acidiostigma) longipennis Hendel 1927: 103 (see Type Material); Zia 1937: 169 (redescription).

Acidiella (Acidiostigma) longipennis: Chen 1948: 76 (in Chinese list).

Euleia (Acidiostigma) longipennis: Hardy 1968: 115 (lectotype designation).

Myoleja (Acidiostigma) longipennis: Foote 1984: 99 (in Palaearctic catalog).

Acidiostigma longippennis [sic]: Wang 1990b: 315 (in Chinese key).

Diagnosis. Wing pattern of this species is somewhat similar to those of *A. amoenum* and *A. postsignatum*, but can be distinguished by narrow subapical band connecting wide discal and anterior apical bands.

Description. Body almost entirely yellow brown with wing length 7.9-8.9mm. Head (Fig. 8C) yellow brown with frontal-head ratio 0.33-0.36, eye ratio 0.75-0.78, genal-eye ratio 0.18-0.21; inner vertical seta 0.7x as long as longest diameter of eye; outer vertical seta 0.7x as long as inner vertical setae; post ocellar seta 0.4x as long as inner vertical seta; paraverticlar seta slightly shorter than post ocellar seta; ocellar triangle dark brown; ocellar seta hairlike, 1.3-1.7x as long as ocellar triangle; 2 orbital setae; 3 frontal setae; antenna with arista-antennal ratio 1.4-1.6; scape and pedicel with dark brown setulae; arista short pubescent; face projecting beyond anterior margin of parafacial and facial ridge; parafacial about 0.3x as wide as flagellomere 1; genal seta strong, dark brown; postgena strongly swollen with long dark brown setulae; postocular setae extend 0.5x distance from upper eye margin to lower eye margin; maxillary palpi with dark brown setulae. Thorax entirely yellow brown with dark brown setae and setulae; dorsocentral setae about 0.6x distance from level of intra-alar setae to postsutural supra-alar setae;

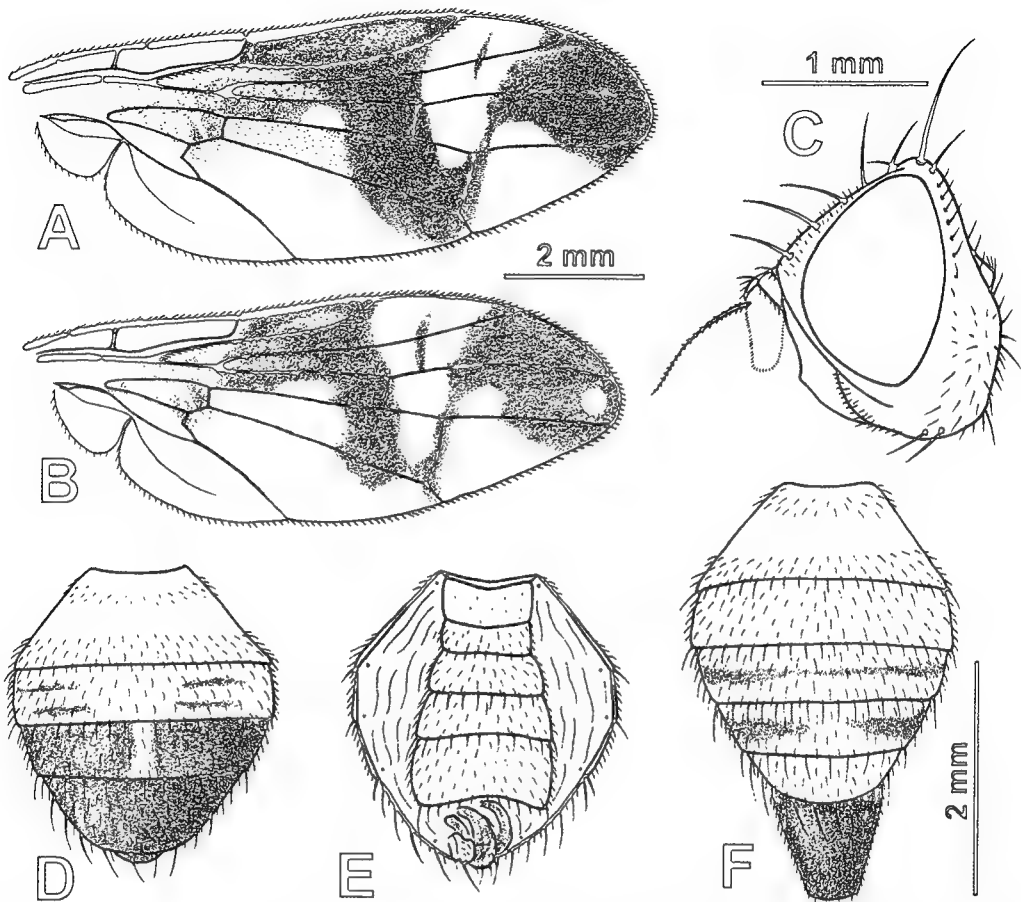


Fig. 8. *Acidiostigma longipennis* (Hendel): (A) wing, ♂; (B) wing, ♀; (C) head, lateral view; (D) abdomen, dorsal view, ♂; (E) abdomen, ventral view, ♂; (F) abdomen, dorsal view, ♀.

scutellum with apical setae 1.3x as long as scutellum, and apical seta 1.2x as long as scutellum, parallel; proepisternum densely covered with long, fine, dark brown setulae; anepisternum with single outstanding seta plus much smaller seta underneath; mediotergite shiny, yellow brown. Legs entirely yellow brown with dark brown setae and setulae; fore femur with 5 posteroventral setae. Wing (Figs 8A-B) with wing-thorax ratio 2.6-2.8, vein R4+5 ratio 1.2-1.3, vein M ratio 0.3-0.4, subcostal-costal ratio 1.8 in male and 1.1 in female; R4+5 with 13 tiny setulae between node and r-m, no setulae beyond r-m; bc and c hyaline; with dark brown discal band from pterostigma to br, then covering apical half to 1/5 of dm and slightly beyond CuA1; in male, enlarged pterostigma orange brown; narrow intercalary band from r2+3 to r4+5; large anterior apical band covering apex of br, 1/3 of r2+3, 1/2 of r4+5, and slightly beyond R4+5; in female, r4+5 apically with small hyaline spot; narrow subapical band joined with anterior apical band, and, in male, joined with discal band in cua1.

Male abdomen (Figs 8D-E, 9A-D) slightly longer than wide, shiny with dark brown setae and setulae; tergite 1+2 entirely yellow brown; tergite 3 almost entirely yellow brown with slight brownish tinge medially; tergite 4 almost entirely brown except narrow yellow brown area medially, tergite 5 entirely

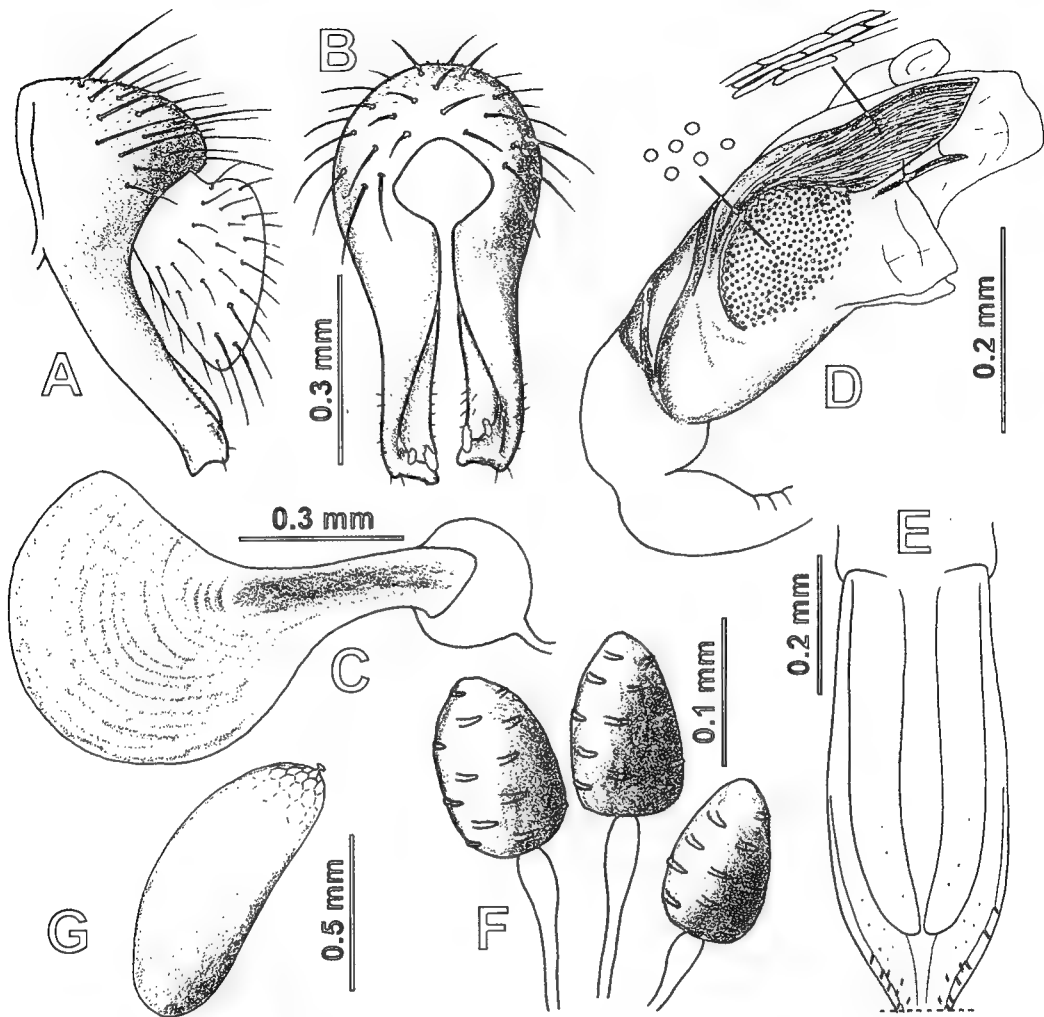


Fig. 9. *Acidiostigma longipennis* (Hendel): (A) epandrial complex, lateral view; (B) epandrial complex, posterior view (cercus removed); (C) ejaculatory apodeme; (D) distiphallus, laterodorsal view (insets about 7x of original figure); (E) aculeus; (F) spermathecae; (G) egg.

brown; preabdominal sternites yellow brown, not widened; epandrium yellow brown with dark brown setae; surstylus yellow brown, apically truncated in lateral view; inner surstylus with subapical preniseta much smaller than apical preniseta; aedeagal apodeme narrow; distiphallus with apicodorsal rod; median granulate sclerite approximately elliptic in outline, about 0.3x as long as distiphallus; dorsal sclerite with pattern of closely approximate narrowly oblong cells.

Female abdomen (Figs 8F, 9E-F) with preabdomen slightly longer than wide; tergite 1-3 and 6 entirely yellow brown with dark brown setae and setulae; tergite 4-5 yellow brown with pairs of brownish sublateral, transverse stripes; oviscape entirely dark brown without any outstanding marginal setae; preabdominal sternites narrow; eversible membrane with taeniae about 0.5x as long as membrane,

medially with strong triangular teeth, posteriorly with smaller triangular teeth; aculeus wide, parallel-sided without any lateral serration (portion toward apex not examined in single available female); 3 ovate spermathecae brown with transverse spinular pattern, apical portion of duct slightly swollen. Egg (Fig. 9G) narrowly elliptic in outline with tiny micropylar end.

Type Material. Lectotype ♂ was designated by inference of syntypes by Hardy (1968) (Hendel's private collection in NHMV; CHINA: Sichuan, 7-14.VIII.1924, D.C. Graham; not examined). In the U. S. National Museum, the senior author found three additional specimens from Sichuan, of which two had exactly same collection data as the lectotype (see next paragraph). I believe they also are a part of syntype studied by Hendel. None of above mentioned specimens were originally labeled as types by Hendel.

Other Material Examined. CHINA: Sichuan, 7-14.VIII.1924, D.C. Graham, 1 ♂, 1 ♀ (USNM); Sichuan, 9 mi SW of Tatsienlu, 8500-13000ft, 26-27.VII.1923, D.C. Graham, 1 ♂ (USNM); Sichuan, 2800m, 1 ♂ (IZAS).

Distribution. Known only from Sichuan, China.

Acidiostigma nigrum (Wang, 1990), comb. nov.

(Figs 10A-G)

Parahyphenidium nigrum Wang 1990a: 227 (see Type Material).

Diagnosis. This species is similar to *A. brevigaster* and *A. cheni*, but can be distinguished by its much elongated cell *sc* (Fig. 10A; subcostal-costal ratio larger than 2.0). This species can be further differentiated from the other two species by its widened preabdominal sternites (Fig. 10B).

Description. Body yellow brown to brown ground color with dark brown pattern; wing length 8.5mm. Head (Figs 10A, C) yellow brown with frontal-head ratio 0.31, eye ratio 0.79, genal-eye ratio 0.13; inner vertical seta 0.6x as long as longest diameter of eye; outer vertical seta 0.7x as long as inner vertical setae; post ocellar seta 0.5x as long as inner vertical seta; paraverticlar seta slightly shorter than post ocellar seta; ocellar triangle dark brown; ocellar seta hairlike, 1.2x as long as ocellar triangle; 2 orbital setae; 4 frontal setae; antenna with arista-antennal ratio 1.8; scape and pedicel with dark brown setulae; arista short pubescent; face projecting beyond anterior margin of parafacial and facial ridge; parafacial 0.3x as wide as flagellomere 1; lower margin of gena with relatively strong dark brown setulae; genal seta strong, dark brown; postgena strongly swollen with long, dark brown setulae on upper area and some pale setulae on lower area; postocular setae extend 0.8x distance from upper eye margin to lower eye margin; maxillary palpi with dark brown setulae. Thorax (Fig. 10A) yellow brown ground color with dark brown pattern; with pale yellow stripe from anterior postpronotal lobe, upper 1/4 of anepisternum, to underside of wing base; scutum with dark brown setae and setulae, with wide, dark brown submesal, presutural dorsocentral, and postsutural dorsocentral stripes; dorsocentral setae about 0.6x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum flat, almost bare; scutellum with basal setae 1.6x as long as scutellum and apical setae 1.4x as long as scutellum; proepisternum densely covered with long, fine, yellow brown setulae; anepisternum with 2 strong setae with lower seta 0.5x as long as upper seta; katatergite and anatergite posteriorly dark brown; mediotergite shiny, entirely dark

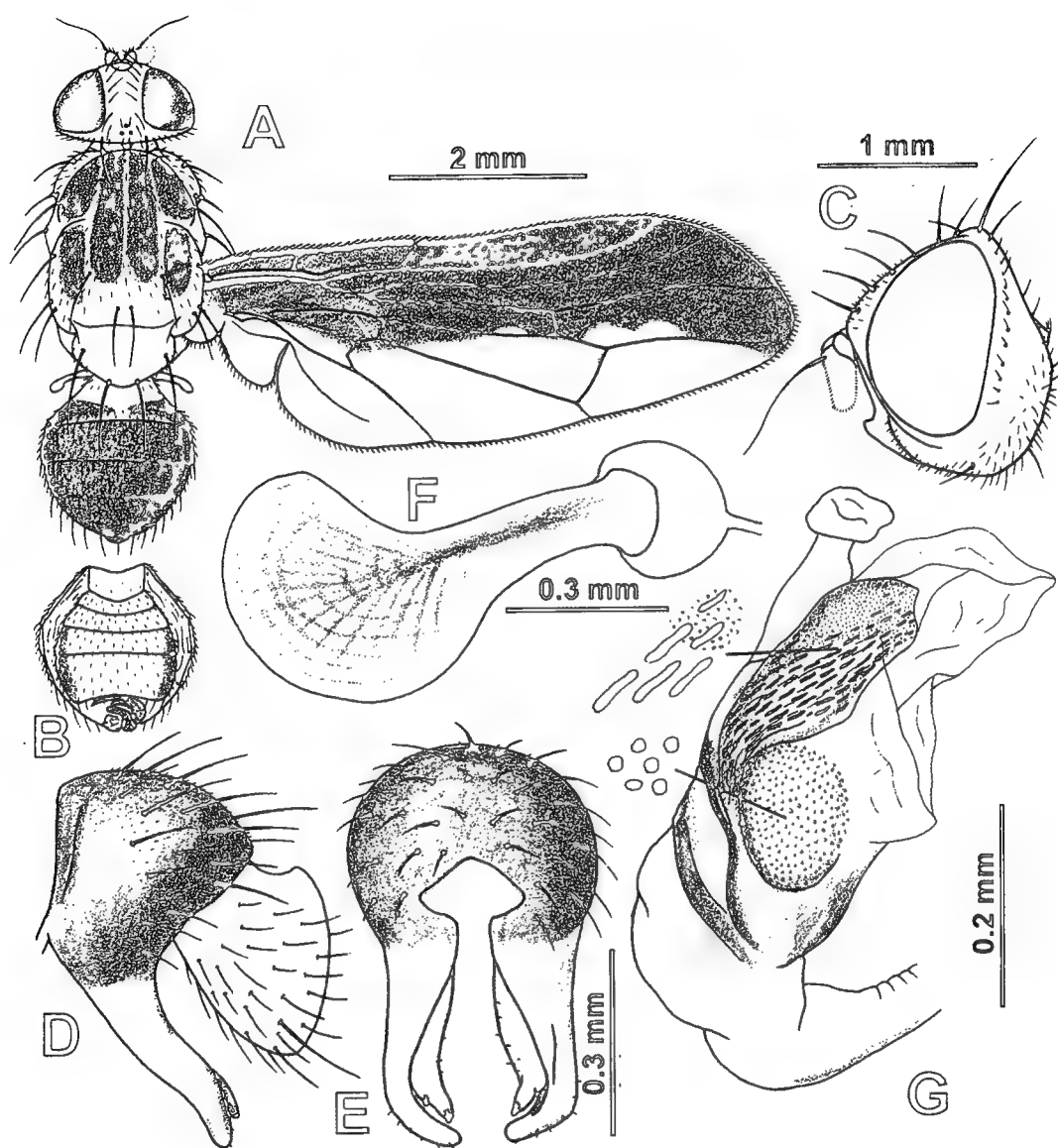


Fig. 10. *Acidiostigma nigratum* (Wang): (A) body, dorsal view, ♂; (B) abdomen, ventral view, ♂; (C) head, lateral view; (D) epandrial complex, lateral view; (E) epandrial complex, posterior view (cercus removed); (F) ejaculatory apodeme; (G) distiphallus, laterodorsal view (insets about 7x of original figure).

brown, contrasting well with yellow brown adjacent area. Legs entirely yellow brown with dark brown setae and setulae; fore coxa elongated, $1/2$ as long as fore femur; fore femur with 4 strong postero-ventral setae. Wing (Fig. 10A) with wing-thorax ratio 2.5, vein R_{4+5} ratio 1.2, vein M ratio 0.29, subcostal-costal ratio 2.2 (probably much smaller in female); R_{4+5} with 14 tiny setulae between node and r-m, 3 setulae beyond r-m; pattern dark brown, almost entirely covering anterior of vein M; r_{4+5} posteriorly with 2 coalesced hyaline subbasal and mesal spots.

Male abdomen (Figs 10A-B, D-G) almost as long as wide; shiny with dark brown setae and setulae; tergite 1+2 almost entirely yellow brown except a pair of dark brown, transverse stripes posteriorly; tergite 3-5 entirely dark brown; preabdominal sternites yellow brown, widened, leaving only narrow stripe of pleural membrane in ventral view; epandrium dark brown with dark brown setae, posterodorsally pubescent; surstylus yellow brown; outer surstylus without posterior lobe developed; inner surstylus with subapical prensiseta much smaller than apical prensiseta; aedeagal apodeme narrow; distiphallus with apicodorsal rod; median granulate sclerite approximately round in outline, about 0.2x as long as distiphallus; dorsal sclerite with pattern of narrowly oblong cells in various length; anteriorly, gaps between cell patterns relatively wide with tiny granulation.

Female unknown.

Type Material. Holotype ♂ (IZAS), CHINA: Yunnan, Ruili (24°N, 97°E), J.K. Yang; abdomen dissected and kept in a genitalia vial.

Distribution. Known only from the type locality in China.

***Acidiostigma omeium* Han and Wang, sp. nov.**

(Figs 11A-E)

Diagnosis. This species can be readily distinguished from other *Acidiostigma* species by having two pairs of narrow and dark brown longitudinal stripes on the scutum with the outer stripes broken near the transverse suture (Fig. 11A).

Description. Body with yellow brown to brown ground color and dark brown pattern; wing length 6.6 mm. Head (Figs 11A, C) entirely yellow brown with frontal-head ratio 0.34, eye ratio 0.80, genal-eye ratio 0.23; inner vertical seta 0.7x as long as longest diameter of eye; outer vertical seta 0.7x as long as inner vertical setae; post ocellar seta 0.4x as long as inner vertical seta; paraverticlar seta 0.7x as long as post ocellar seta; ocellar triangle dark brown; ocellar seta short, hairlike, only slightly longer than ocellar triangle; 2 orbital setae; 3 frontal setae; antenna with arisal-antennal ratio 1.7; scape and pedicel with brown setulae; arista short pubescent; face yellow brown, projecting beyond anterior margin of parafacial and facial ridge; parafacial about 0.3x as wide as flagellomere 1; lower margin of gena with relatively weak, short, brown setulae; genal seta strong, dark brown; postgena strongly swollen with long, brown setulae; postocular setae extend 0.7x distance from upper eye margin to lower eye margin; mouth part short; palpi with brown setulae. Thorax (Fig. 11A) with pale yellow stripe from anterior postpronotal lobe, upper 1/3 of anepisternum, to underside of wing base; scutum with dark brown setae and setulae, brown in ground color with narrow, dark brown submesal, presutural dorsocentral, and postsutural dorsocentral stripes; dorsocentral setae about 0.6x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum flat, almost bare (both basal and apical scutellar setae broken in only available specimen); proepisternum densely covered with long, fine, pale setulae; anepisternum with 2 setae with lower seta 0.5x as long as upper seta; mediotergite shiny, dark brown, contrasting well with yellow brown pleural area. Legs entirely yellow brown with brown to dark brown setae and setulae; fore femur with 5 posteroventral setae. Wing (Fig. 11A) with wing-thorax ratio 2.9, vein R4+5 ratio 1.3, vein M ratio 0.23, subcostal-costal ratio 1.2 (probably much larger in male); R4+5 with 14 tiny setulae between node and r-

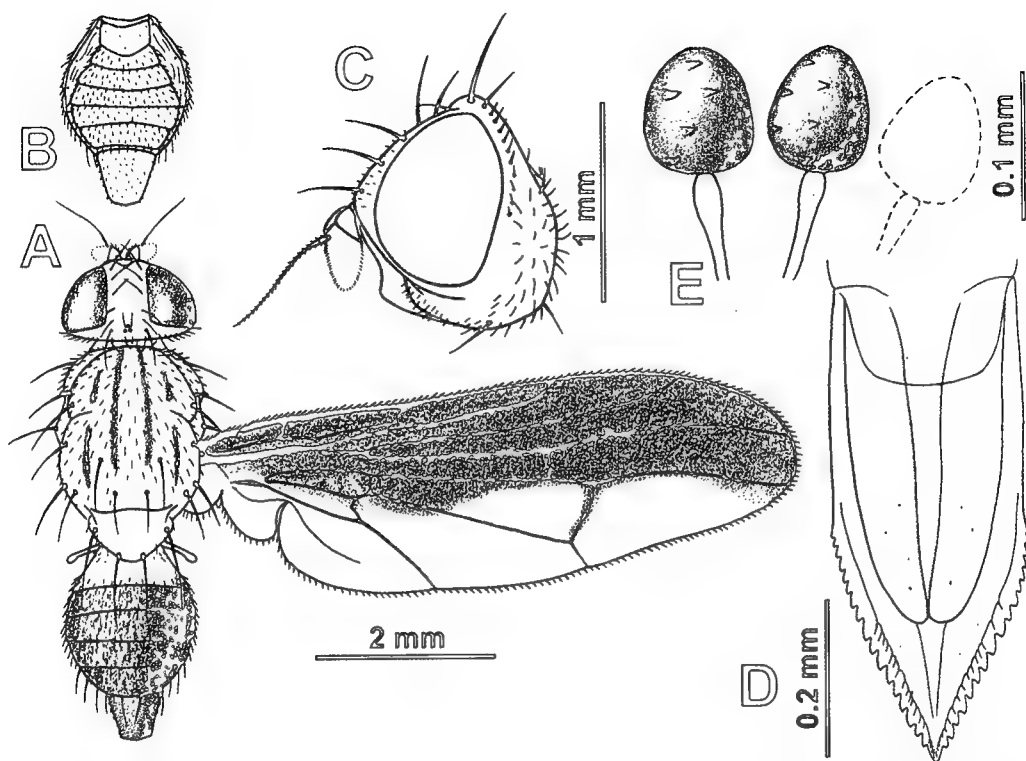


Fig. 11. *Acidrostigma omeium* Han and Wang, sp. nov.: (A) body, dorsal view, ♀; (B) abdomen, ventral view, ♀; (C) head, lateral view; (D) aculeus; (E) spermathecae.

m, no setulae beyond r-m; pattern dark brown, almost entirely covering anterior of vein M; br postero-apically hyaline.

Female abdomen (Figs 11A-B, D-E) with preabdomen slightly longer than wide; shiny with dark brown setae and setulae; preabdominal tergite 1+2 yellow brown; tergite 3-6 shiny brown; preabdominal sternites, yellow brown widened, leaving only narrow stripe of pleural membrane in ventral view; oviscapae shiny orange brown with fine setulae, without any prominent marginal setae; eversible membrane with taeniae about 0.5x as long as membrane, medially with very strong triangular teeth, posteriorly with tiny triangular teeth; aculeus wide, parallel-sided, apical 1/2 tapered with strong lateral serration (about 15 denticles on each side); 2 ovate spermathecae present (additional one may have been lost during dissection), brown with transverse spinular patterns, apical portion of duct slightly swollen.

Male unknown.

Type Material. Holotype ♀, CHINA: Mt. Omei, Sichuan, 14.IV.1955, K.R. Huang & G. T. Jin (IZAS); left antenna, most of setae on head, and right fore leg missing; abdomen dissected and kept in a genitalia vial.

Etymology. The specific epithet is derived from Mt. Omei, the type locality.

Distribution. Known only from the type locality in China.

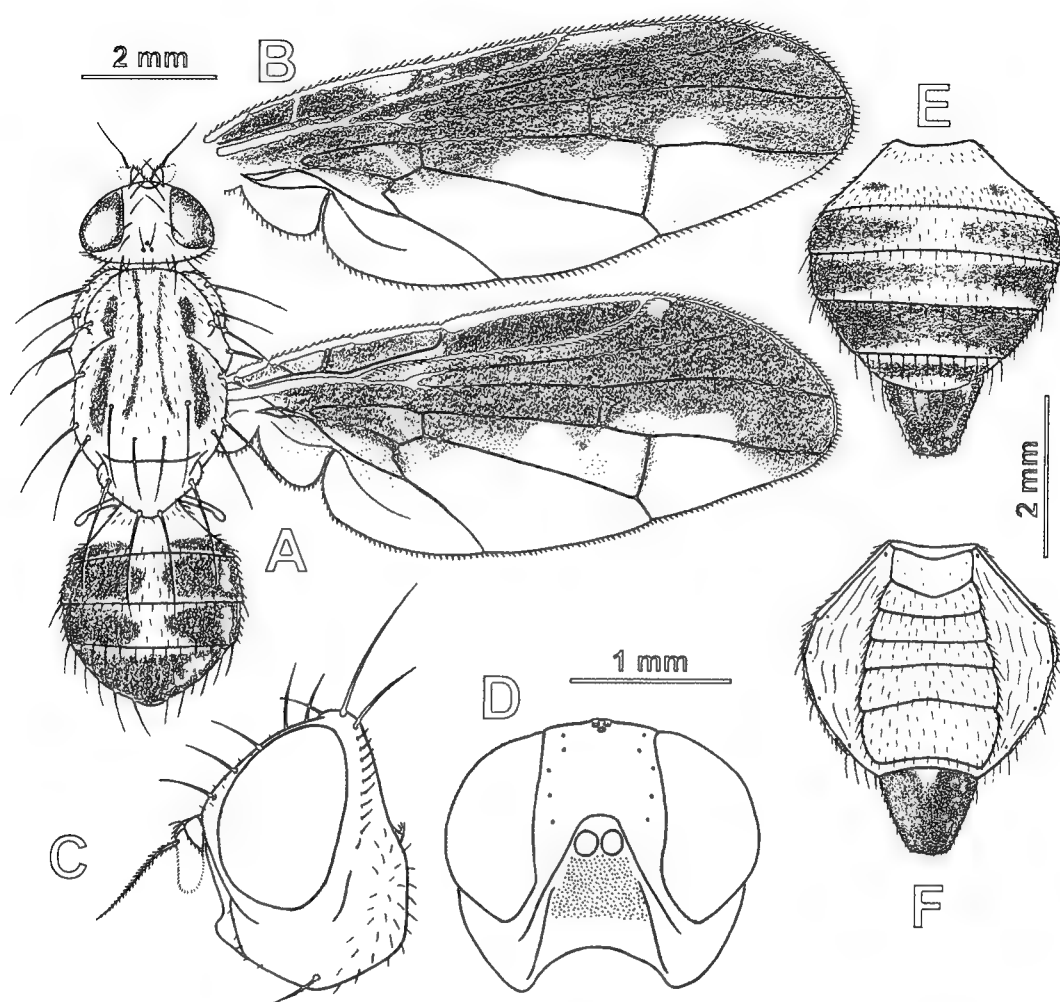


Fig. 12. *Acidiostigma polyfasciatum* (Miyake): (A) body, dorsal view, ♂; (B) wing, ♀; (C) head, lateral view; (D) head, anterior view; (E) abdomen, dorsal view, ♀; (F) abdomen, ventral view, ♀.

***Acidiostigma polyfasciatum* (Miyake, 1919), comb. nov.**

(Figs 12A-F, 13A-G)

Hypenidium polyfasciatum Miyake 1919: 149 (see Type Material).

Hemilea polyfasciata: Hendel 1927: 100 (redescription).

Parahypenidium polyfasciata: Shiraki 1933: 205 (redescription).

Parahypenidium polyfasciatum: Foote 1984: 111 (in Palaearctic catalog); Shiraki 1950 (redescription); Ito 1952: 8 (in Shikoku list); Ito 1965: 222 (redescription); Ito 1984: 117 (redescription, host record); Kwon 1985: 70 (redescription from Korean specimens); Ito 1986: 24 (in Niigata list); Kwon 1994: 294 (in Korean checklist).

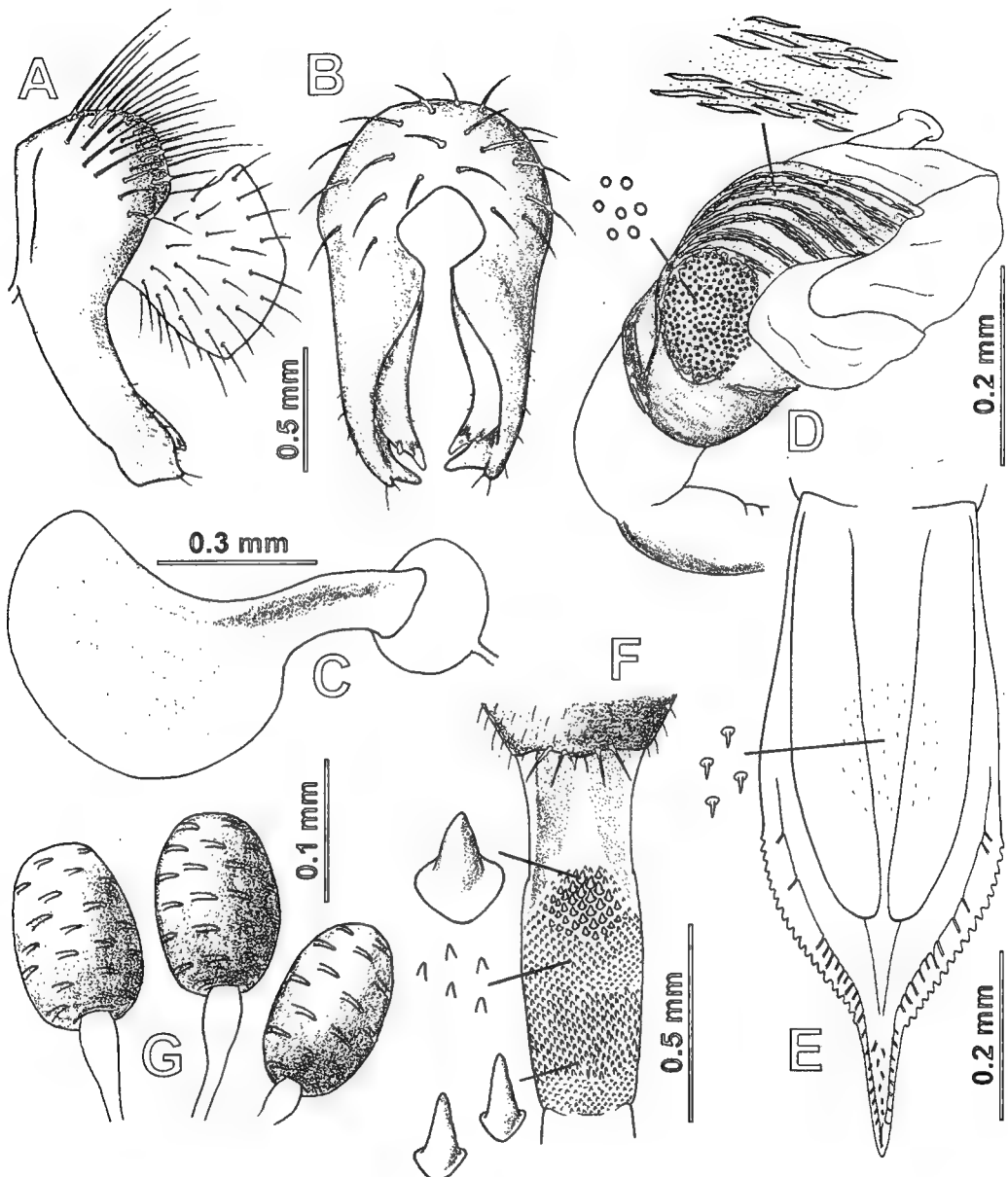


Fig. 13. *Acidiostigma polyfasciatum* (Miyake): (A) epandrial complex, lateral view; (B) epandrial complex, posterior view (cercus removed); (C) ejaculatory apodeme; (D) distiphallus, laterodorsal view (insets about 7x of original figure); (E) aculeus (insets 10x of original figure); (F) eversible membrane (insets 10x of original figure); (G) spermathecae.

Diagnosis. This species can be easily distinguished from other *Acidiostigma* species by the following scutum pattern: presutural dorsocentral, and postsutural dorsocentral stripes about 2x as wide as submesal stripes (Fig. 12A).

Description. Body pale yellow brown to dark brown with dark brown setae; wing length 8.4-9.3 mm. Head (Figs 12C-D) mostly pale yellow to yellow brown except brown facial area; frontal-head ratio 0.38-0.39, eye ratio 0.76-0.79, genal-eye ratio 0.20-0.33; inner vertical seta slightly shorter than longest diameter of eye; outer vertical seta 0.6x as long as inner vertical setae; post ocellar seta half as long as inner vertical seta; paravertical seta 0.5-0.7x as long as post ocellar seta; ocellar triangle dark brown; ocellar seta 2.5x as long as ocellar triangle; 2 orbital setae; 3 frontal setae; antenna with arisal-antennal ratio 1.5-1.6; scape and pedicel with yellow brown to brown setulae; arista short pubescent; face slightly projecting beyond anterior margin of parafacial and facial ridge; parafacial 0.3x as wide as flagellomere 1; face pale yellow in ground color with upper 2/3 brown; lower margin of gena with fine, yellow brown setulae; with single strong, dark brown genal seta; post gena strongly swollen with long, yellow brown setulae; postocular setae extend 0.7x distance from upper eye margin to lower eye margin; mouth part short; palpi with yellow brown setulae. Thorax (Fig. 12A) yellow brown in ground color with dark brown setae and setulae; scutum with narrow dark brown submesal stripes; presutural dorsocentral, and postsutural dorsocentral stripes narrow but about 2x as wide as submesal stripes; dorsocentral setae about 0.5-0.7x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum with apical setae slightly shorter than basal setae; posterior setae; proepisternum densely covered with long, fine, pale setulae; anepisternum with single outstanding seta plus much smaller hairlike seta underneath; anatergite and katatergite yellow brown with posterior 1/5 dark brown; mediotergite shiny, dark brown. Legs entirely pale yellow with pale yellow setae and setulae; fore femur with 5 posteroventral setae. Wing (Figs 12A-B) with wing-thorax ratio 2.5-2.6, vein R4+5 ratio 1.2-1.4, vein M ratio 0.29-0.36, subcostal-costal ratio 1.8 in male and 1.2 in female; R4+5 with 15-19 tiny setulae between node and r-m, no setulae beyond r-m; pattern brown to dark brown, almost entirely covering anterior of vein M; r1 with tiny hyaline spot near apex of vein R1; r4+5 with 2 large coalesced hyaline subbasal and mesal spots posteriorly; dm largely hyaline except anterobasal area.

Male abdomen (Figs 12A, 13A-D) slightly longer than wide, shiny with dark brown setae and setulae; tergite 1+2 yellow brown with posterior half with a pair of large submesal to lateral dark brown spots; tergite 3 and 4 almost entirely dark brown except narrow mesal yellow brown area; tergite 5 entirely dark brown; preabdominal sternites narrow; epandrium yellow brown with brown setae; surstylus yellow brown, apically truncated in lateral view; inner surstylus with subapical prensiseta much smaller than apical prensiseta; aedeagal apodeme large fan-shaped; distiphallus with apicodorsal rod; median granulate sclerite approximately elliptic in outline, about 0.3x as long as distiphallus; dorsal sclerite with pattern of closely approximate narrowly oblong cells arranged in comblike pattern.

Female abdomen (Figs 12E-F, 13E-G) with preabdomen slightly longer than wide; with dark brown setae and setulae; tergite 1+2 yellow brown with a pair of sublateral dark brown spots; tergite 3 brown except narrow middle portion; each of tergite 4-6 brown except narrow anterior and posterior margin; oviscapae entirely brown without any outstanding marginal setae; preabdominal sternites narrow; eversible membrane with taeniae about 0.5x as long as membrane, medially with strong triangular teeth, posteriorly with smaller triangular teeth; aculeus wide, apical 1/2-1/5 tapered with lateral serration, apical 1/5 narrowly elongated; 3 ovate spermathecae brown with transverse spinular pattern, apical portion of duct slightly swollen.

Type Material. Holotype ♀, JAPAN, Honshu, Nagano Pref., Kiso-Fukushima, 31.VII.1914, Mitsuhashi. Shiraki (1933: 207) said "type not found in Miyake's collection; male type in the Entomological Museum of Government Research Institute, Taihoku, Formosa." Even though Shiraki might have meant to designate a neotype for this species, we do not believe it as a valid neotype designation because he did not include any data pertaining the specimen that he called "male type." In addition, relatively clear identity of *A. polyfasciatum* does not meet "exceptional circumstances" for neotype designation (Article 75a of I.C.Z.N., Ride et al., 1985).

Other Material Examined. JAPAN: Honshu, Tottori, Daisen, 14.VII.1950, S. Ito, 1 ♂, 1 ♀ (NHMB); same data, 1 ♂ (MZIU); KOREA: Chollabuk-do, Mt. Togyusan, 18.VI.1991, Y.J. Kwon, 1 ♂ (KNU); Kyunsangnam-do, Mt. Chirisan, 9.VIII.1989, 1 ♀ (KNU)

Distribution. Korea; Japan.

Remarks. This is the only *Acidiostigma* species, whose host is known. According to Ito (1984), some specimens were reared from the leaf mines of *Clerodendron trichomum* Thunberg [Verbenaceae].

***Acidiostigma postsignatum* Chen, 1948**

(Figs 14A-G)

Acidiella (Acidiostigma) postsignata Chen 1948: 112(see Type Material).

Acidiostigma postsignata: Hardy 1977: 103 (in Oriental catalog); Wang 1990b: 315 (in Chinese key).

Diagnosis. This almost entirely yellow species can be distinguished from other *Acidiostigma* species by its wing pattern: discal band clearly separated from apical plus subapical bands (Fig. 14B).

Description. Body almost entirely yellow brown with dark brown setae; wing length 6.6mm. Head (Fig. 14A) yellow brown with frontal-head ratio 0.33, eye ratio 0.75, genal-eye ratio 0.17; inner vertical seta 0.6x as long as longest diameter of eye; outer vertical seta 0.8x as long as inner vertical setae; post ocellar seta 0.6x as long as inner vertical seta; paraverticlar seta slightly shorter than post ocellar seta; ocellar triangle dark brown; ocellar seta hairlike, 2.3x as long as ocellar triangle; 2 orbital setae; 3 frontal setae; antenna with arisal-antennal ratio 1.6; scape and pedicel with dark brown setulae; arista short pubescent; face entirely yellow brown, slightly projecting beyond anterior margin of parafacial and facial ridge; parafacial very narrow, ptilinal fissure almost touching eye margin; genal seta strong yellow brown; postgena strongly swollen with long yellow brown setulae; postocular setae extend 0.7x distance from upper eye margin to lower eye margin; maxillary palpi with pale setulae. Thorax subshiny, almost entirely yellow brown with dark brown setae and setulae; dorsocentral setae about 0.7x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum with basal setae 2.2x as long as scutellum, and apical seta 2x as long as scutellum; proepisternum densely covered with long pale setulae; 2 anepisternal setae with lower one 0.6x as long as upper one; mediotergite shiny dark brown, medially with yellow brown longitudinal stripe. Legs entirely yellow brown with pale to dark brown setae and setulae; fore femur with 6 posteroventral setae with basal 3 setae yellow brown and apical 3 dark brown. Wing (Fig. 14B) with wing-thorax ratio 2.4, vein R4+5 ratio 1.6, vein M ratio 0.54, subcostal-costal ratio 0.93 in male; R4+5 with about 11 tiny setulae between node and r-m, no setulae beyond r-m; bc and c hyaline;

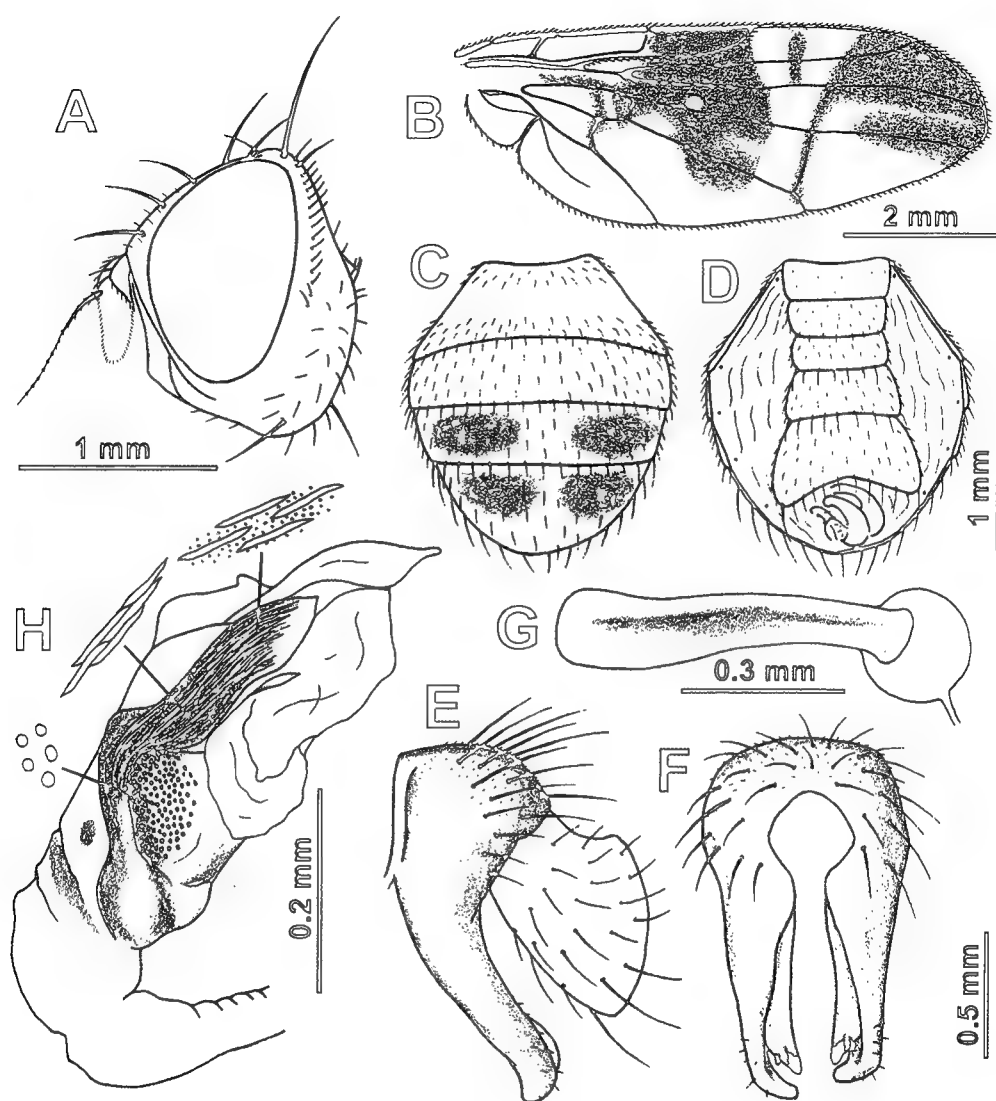


Fig. 14. *Acidiostigma postsignatum* Chen: (A) head, lateral view; (B) wing, ♂; (C) abdomen, dorsal view, ♂; (D) abdomen, ventral view, ♂; (E) epandrial complex, lateral view; (F) epandrial complex, posterior view (cercus removed); (G) ejaculatory apodeme; (H) distiphallus, laterodorsal view (insets about 7x of original figure).

with wide dark brown discal band from pterostigma to br, then covering from apical 2/3 to 1/5 of dm and slightly beyond CuA1; br with tiny round spot in middle between bm-cu and r-m; intercalary band from r1 to r2+3; large anterior apical band covering apex of br, 2/5 of r2+3, 1/2 of r4+5, and slightly beyond R4+5; narrow subapical band around dm-cu and r4+5, and merged with anterior apical band in r1 and r2+3.

Male abdomen (Figs 14C-H) slightly longer than wide, shiny with dark brown setae and setulae; tergite 1-3 entirely yellow brown; tergite 4-5 each with pair of large brown, loosely defined sublateral specks;

preabdominal sternites yellow brown, not widened; epandrium yellow brown with dark brown setae; surstylus yellow brown, apically truncated in lateral view; inner surstylus with subapical prensiseta much smaller than apical prensiseta; aedeagal apodeme narrow, rod-shaped; distiphallus with distinct apicodorsal rod; median granulate sclerite approximately elliptic in outline, about 0.3x as long as distiphallus; dorsal sclerite entirely with pattern of closely approximate narrowly oblong cells.

Female unknown

Type Material. Holotype ♂, CHINA: Chekiang, Tianmushan, 6.VIII.1935 (IZAS); abdomen dissected and kept in a genitalia vial.

Other Material Examined. China: Fukien, Shaowu, 9.V.1943 (IZAS), 1 ♂ (IZAS). This specimen, which was not mentioned in the original description, was labelled as a paratype of *A. postsignatum*.

Distribution. China: Chekiang, Fukien

***Acidistigma s-nigrum* (Matsumura, 1916), comb. nov.**

(Figs 15A-E, 16A-G)

Trypeta s-nigrum Matsumura 1916: 417 (see Type Material); Matsumura 1931: 370 (redescription); Ito 1952: 5 (in Sikoku list).

Genus? *s-nigrum*: Hendel 1927: 213 (cited Matsumura's original description).

Pseudacidia s-nigrum: Ito 1956: 2 (in Japanese list); Ito 1965: 222 (redescription); Foote 1984: 119 (in Palaearctic catalog).

Shiracidia s-nigrum: Ito 1984: 112 (redescription); Kwon 1985: 68 (redescription); Kwon 1994: 294 (in Korean checklist).

Acidia (Pseudacidia) takeuchii Shiraki 1933: 222 (see Type Material); Richter 1963: 771 (in Soviet Far East list); Ito 1984: 112 (synonymized with *s-nigrum*).

Pseudacidia takeuchii: Ito 1949 (in Kyushu list); Ito 1952: 5 (in Sikoku list; suspected synonymy with *s-nigrum*); Foote 1984: 119 (in Palaearctic catalog).

Pseuopspheniscus [sic] *iwatensis* Shinji 1939: 290 (see Type Material); Foote 1984: 119 (synonymized with *takeuchii*).

Pseudopspheniscus iwatensis: Ito 1984: 112 (synonymized with *s-nigrum*).

Diagnosis. As implicated by its name, this species can be easily distinguished from other *Acidistigma* species by the characteristic S-shaped anterior apical+subapical bands (Figs 15B, C).

Description. Body almost entirely yellow brown with wing length 6.6–8.4 mm. Head (Fig. 15A) yellow brown with frontal-head ratio 0.34–0.37, eye ratio 0.72–0.78, genal-eye ratio 0.15–0.22; inner vertical seta 0.8x as long as longest diameter of eye; outer vertical seta 0.7x as long as inner vertical setae; post ocellar seta 0.4x as long as inner vertical seta; paraverticlar seta slightly shorter than post ocellar seta; ocellar triangle dark brown; ocellar seta hairlike, about 1.5x as long as ocellar triangle; 2 orbital setae; 5 frontal setae (4 in one male); antenna with arista-antennal ratio 1.5–1.6; scape and pedicel with dark brown setulae; arista short pubescent; face projecting beyond anterior margin of parafacial and facial ridge; parafacial about half as wide as flagellomere 1; genal seta strong, dark brown; postgena strongly

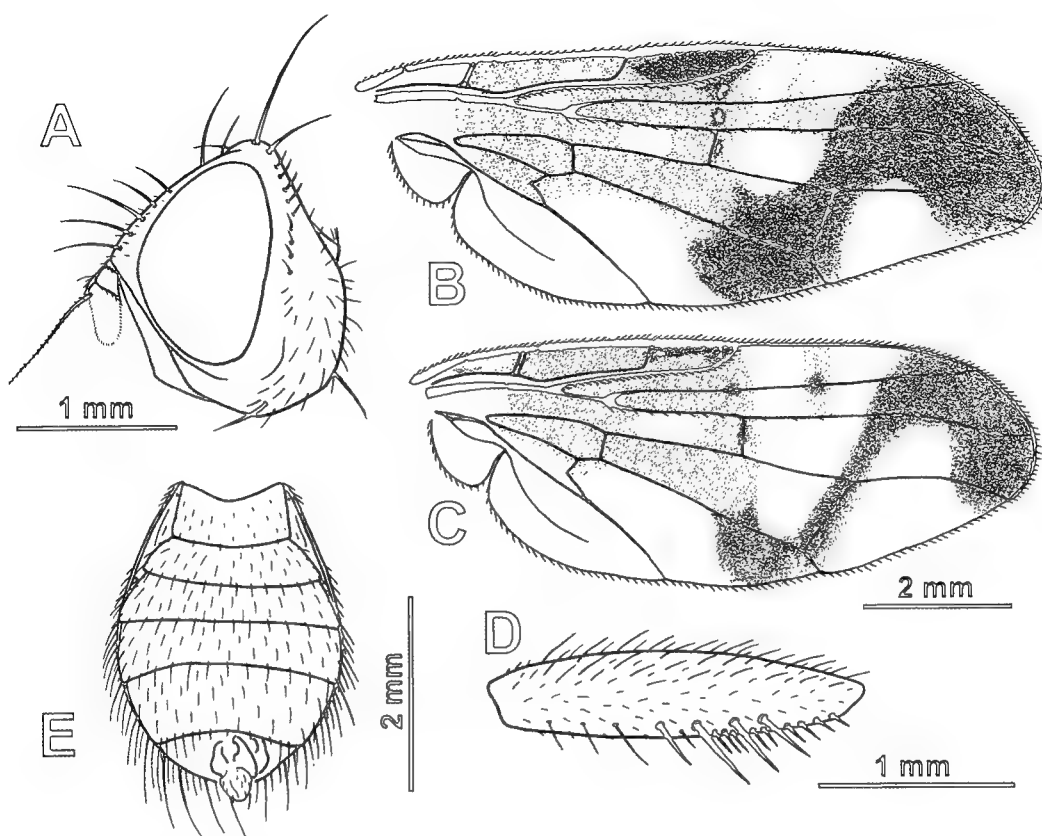


Fig. 15. *Acidiostigma s-nigrum* (Matsumura): (A) head, lateral view; (B) wing, ♂; (C) wing, ♀; (D) fore femur, posterior view, ♂; (E) abdomen, ventral view, ♂.

swollen with long dark brown setulae; postocular setae extend 0.7x distance from upper eye margin to lower eye margin; maxillary palpi with brown setulae. Thorax almost entirely yellow brown with dark brown setae and setulae; scutum with dark brown anterior submesal spots; dorsocentral setae about 0.5–0.7x distance from level of intra-alar setae to postsutural supra-alar setae; scutellum with apical setae 1.5x as long as scutellum, and apical seta 1.3x as long as scutellum, parallel; proepisternum densely covered with long, fine, dark brown setulae; 2 anepisternal setae with lower one 0.7x as long as upper one; mediotergite shiny dark brown, medially with narrow yellow brown longitudinal stripe. Legs (Fig. 15D) entirely yellow brown with dark brown setae and setulae; fore femur with 4 strong and 2–3 weaker posteroventral setae; apical 2/5 of fore femur with row of short and strong setulae situated slightly lower than posteroventral setae. Wing (Figs 15B–C) with wing-thorax ratio 2.5–2.9, vein R4+5 ratio 1.8–2.2, vein M ratio 0.77–0.96, subcostal-costal ratio 0.8 in male and 0.7 in female; R4+5 with 11–12 tiny setulae between node and r-m, 3 setulae beyond r-m; bc and c pale yellow; pterostigma brown; anterobasal half of wing largely pale yellow; tiny brown remnant of intercalary band on R2+3; large anterior apical band covering apex of br, 2/5 of r2+3, 2/3 of r4+5, and slightly beyond R4+5; in female, r4+5 apically with large hyaline spot; wide subapical band joined with anterior apical band,

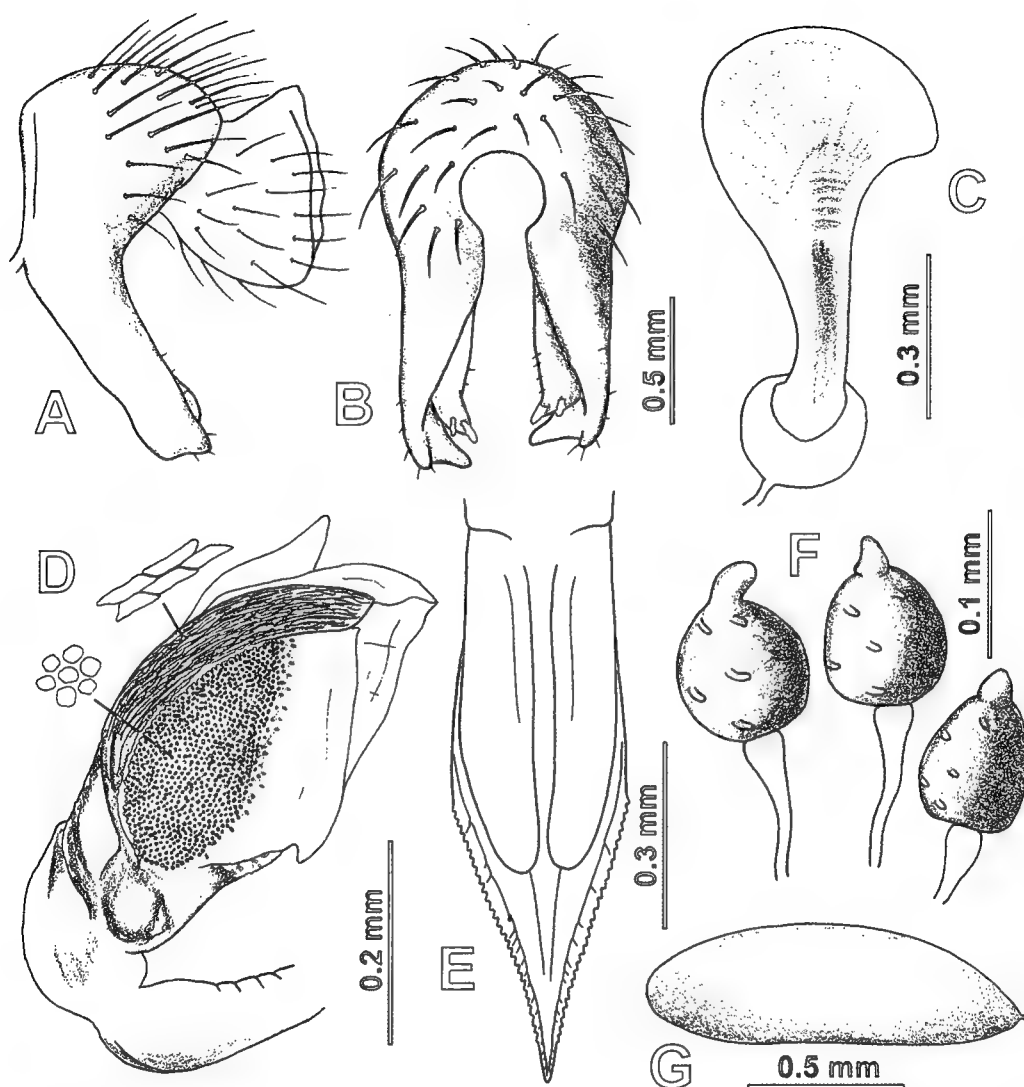


Fig. 16. *Acidiostigma s-nigrum* (Matsumura): (A) epandrial complex, lateral view; (B) epandrial complex, posterior view (cercus removed); (C) ejaculatory apodeme; (D) distiphallus, laterodorsal view (insets about 7x of original figure); (E) aculeus; (F) spermathecae; (G) egg.

forming characteristic S-shape.

Male abdomen (Figs 15E, 16A-D) 1.4x as long as wide, shiny yellow brown with dark brown setae and setulae; preabdominal sternites widened, leaving only narrow stripe of pleural membrane in ventral view; epandrium yellow brown with dark brown setae; surstylus yellow brown, apically truncated in lateral view; inner surstylus with subapical prensiseta much smaller than apical prensiseta; aedeagal apodeme wide, fan-shaped; distiphallus with apicodorsal rod; median granulate sclerite approximately elliptic in outline, about 0.6x as long as distiphallus; dorsal sclerite with pattern of closely approximate narrowly oblong cells.

Female abdomen (Figs 16E-F) entirely yellow brown with dark brown setae and setulae; preabdominal sternites widened, leaving only narrow stripe of pleural membrane in ventral view; oviscape entirely yellow brown with a pair of short ventral marginal setae; eversible membrane with taeniae about 0.5x as long as membrane, medially with strong triangular teeth, posteriorly with smaller triangular teeth; aculeus wide, parallel-sided, apical 4/7 tapered with distinct lateral serration; 3 ovate spermathecae brown with transverse spinular pattern, apex of spermatheca with small tubercle, apical portion of duct slightly swollen. Egg (Fig. 16G) narrowly elliptic in outline with tiny micropylar end.

Type Material. Syntype ♂ of *A. s-nigrum*: JAPAN: Honshu, Takino, near Tokyo (HUS; not examined). Syntype ♂ ♀ of *A. takeuchi*: unspecified number collected by K. Takeuchi (NTUC; not examined); distribution range of the syntypes given - JAPAN: Sapporo, Fuji, Aomori, Daisen, Odaigahara; RUSSIA: Sakhalin. Holotype of *P. iwatensis*, sex unknown, JAPAN: Kuriyagawa, outside Morioka City, 5.VII.1938 (depository unknown).

Other Material Examined. JAPAN: Honshu, Mt. Fujisan, 8.VIII.1964, G. E. Bohart, 1 ♀ (UHH); Honshu, Nara, Odaigahara, 1500m, 3.VIII.1948, A. Tanaka, 1 ♂ (NHMB); same collection data, 1 ♂ (UOP); Honshu, Hyogo Pref., Hyonoson, 19.VI.1953, A. Nagatenni, 1 ♀ (UOP). KOREA: Kangwon-do, Mt. Seolaksan, 30.VII.1982, 1 ♀ (KNU).

Distribution. Korea; Japan; Russia (Sakhalin).

***Acidiostigma voilaceum* (Wang, 1990), comb. nov.**

(Figs 17A-F, 18A-F)

Parahypenidium voilaceum Wang 1990b: 228 (see Type Material).

Diagnosis. This species can be distinguished from other *Acidiostigma* species by its entirely dark brown scutum and scutellum.

Description. Body pale yellow to dark brown with dark brown setae; wing length 7.6 mm. Head (Figs 17A-B) mostly pale yellow to yellow brown except brown facial area; frontal-head ratio 0.33, eye ratio 0.79, genal-eye ratio 0.10; inner vertical seta 0.6x as long as longest diameter of eye; outer vertical seta 0.8x as long as inner vertical setae; post ocellar seta half as long as inner vertical seta; paraverticlar seta 0.7x as long as post ocellar seta; ocellar triangle dark brown; ocellar seta hairlike, 1.2x as long as ocellar triangle; 2 orbital setae; 3 frontal setae; antenna with arisal-antennal ratio 1.6; scape and pedicel with brown setulae; arista short pubescent; face slightly projecting beyond anterior margin of parafacial and facial ridge; parafacial 0.2x as wide as flagellomere 1; face pale yellow in ground color with upper 5/6 brown; lower margin of gena with fine, yellow brown setulae; with single strong, dark brown genal seta; post gena strongly swollen with dark brown setulae on upper area, with pale setulae on lower area; postocular setae extend 0.7x distance from upper eye margin to lower eye margin; mouth part short; palpi mostly with yellow brown setulae, apically with dark brown setulae. Thorax yellow brown in ground color with dark brown scutum; setae and setulae dark brown; postpronotal lobe with anterior half yellow brown and posterior half dark brown; scutum entirely dark brown; dorsocentral setae about same level as postsutural supra-alar setae; scutellum dark brown with apical setae 2x as long as scutellum and basal

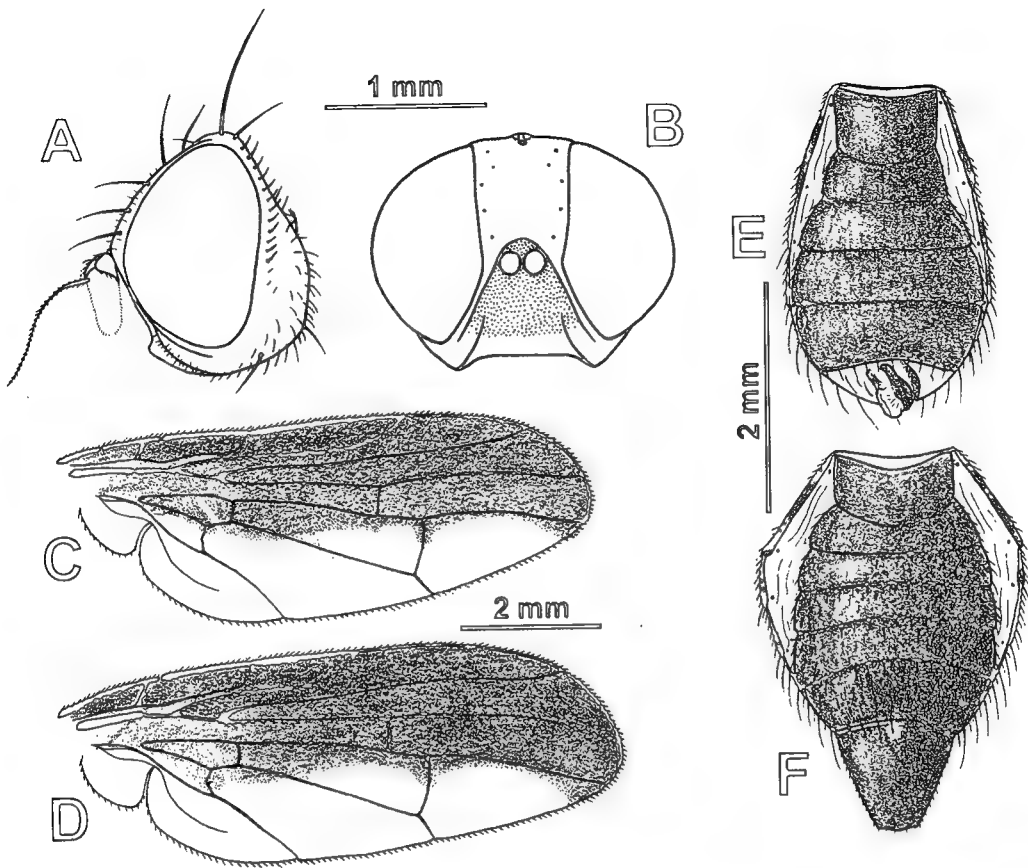


Fig. 17. *Acidostigma voilaceum* (Wang): (A) head, lateral view; (B) head, anterior view; (C) wing, ♂; (D) wing, ♀; (E) abdomen, ventral view, ♂; (F) abdomen, ventral view, ♀.

setae 1.8x as long as scutellum, slightly divergent; pleura pale yellow to yellow brown, contrasting with dark brown scutum; proepisternum densely covered with long, fine, pale setulae; anepisternum with single outstanding seta plus much smaller hairlike seta underneath; anatergite and katatergite dark brown; mediotergite shiny, dark brown. Legs entirely pale yellow with dark brown setae and pale yellow setulae; fore femur with 5 posteroventral setae. Wing (Figs 17C-D) with wing-thorax ratio 2.5, vein R4+5 ratio 1.4, vein M ratio 0.26, subcostal-costal ratio 1.6 in male and 1.0 in female; R4+5 with 24 tiny setulae between node and r-m, no setulae beyond r-m; pattern dark brown, entirely covering anterior of vein M; bm dark brown; dm largely dark brown except hyaline postero-apical area; m largely hyaline except anterior area.

Male abdomen (Figs 17E, 18A-D) 1.5x longer than wide with dark brown setae and setulae; preabdominal tergites entirely shiny dark brown; preabdominal sternites brown, moderately widened; epandrium yellow brown with dark brown setae; surstylus yellow brown, apically somewhat pointed in lateral view; inner surstylus with subapical prensiseta much smaller than apical prensiseta; aedeagal apodeme narrow rod-shape; distiphallus with apicodorsal rod; median granulate sclerite approximately

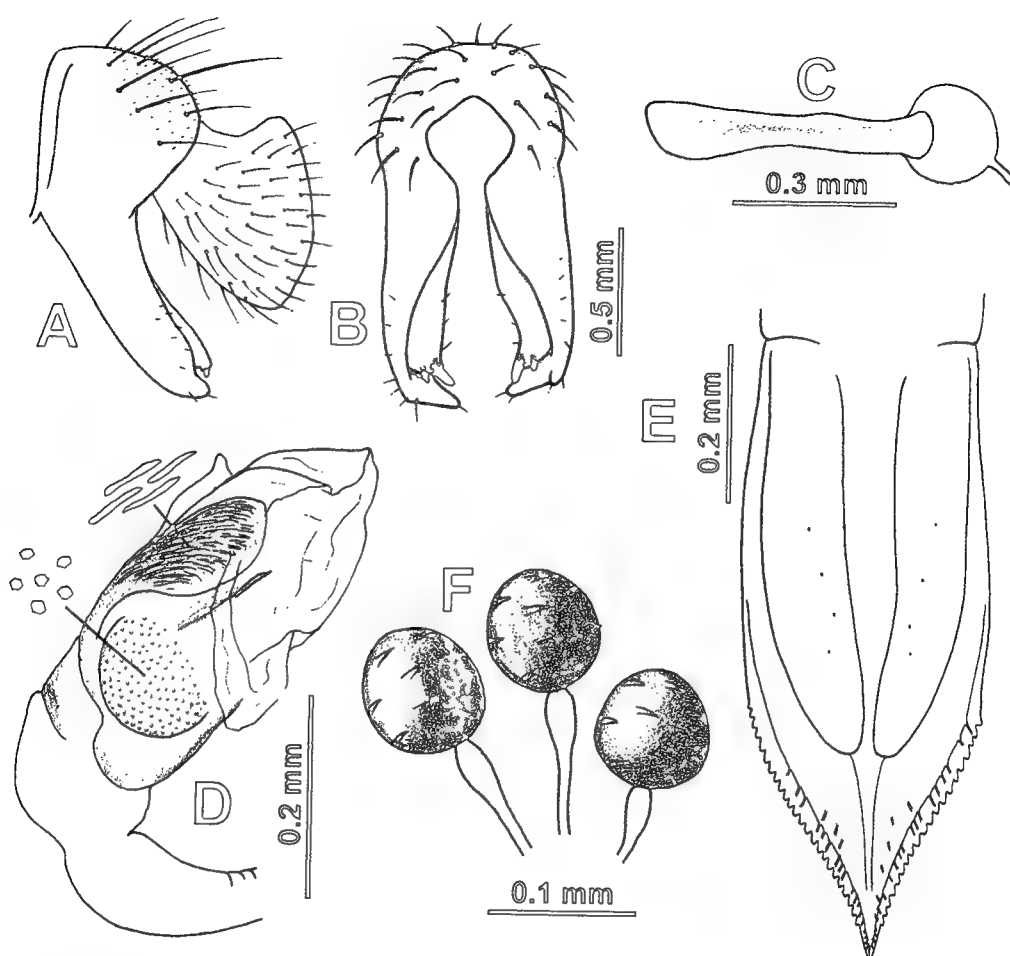


Fig. 18. *Acidiostigma voilaceum* (Wang): (A) epandrial complex, lateral view; (B) epandrial complex, posterior view (cercus removed); (C) ejaculatory apodeme; (D) distiphallus, laterodorsal view (insets about 7x of original figure); (E) aculeus; (F) spermathecae.

round in outline, about 0.3x as long as distiphallus; dorsal sclerite with pattern of closely approximate narrowly oblong cells.

Female abdomen (Figs 17F, 18E-F) with preabdomen slightly longer than wide; preabdominal tergites entirely shiny dark brown; preabdominal sternites brown, moderately widened; oviscapae dorsally dark brown and ventrally brown without any outstanding marginal setae; eversible membrane with taeniae about 0.5x as long as membrane, medially with strong triangular teeth, posteriorly with smaller triangular teeth; aculeus wide, apicolaterally serrate with apical 1/5 narrowly elongated; 3 circular spermathecae brown with transverse spinular pattern, apical portion of duct slightly swollen.

Type Material. Holotype ♂, CHINA: Sichuan, Mt. Omei, 900 m (29°N, 103°E), 10.IV.1957, L.-Y. Zheng and H.-H. Cheng (IZAS); teneral specimen with head collapsed and left wing missing; abdomen dissected and kept in a genitalia vial.

Other Material Examined. CHINA: Sichuan, Mt. Omei, 12.V.1955, L. Wu, 1 ♀ (IZAS); labelled as Allotype, but not designated as such in the original description.

Distribution. Known only from Sichuan, China.

Remarks. Since the holotype is a teneral specimen in poor condition, the description of coloration and measurements is mainly based on the female specimen from same locality.

List of *Acidiostigma* spp. from Other Area

The following five species (possibly only three species) from other area are also recognized under *Acidiostigma* based on the original and subsequent descriptions.

1. *Acidiostigma apicalis* (Bezzi)

Acidia apicalis Bezzi 1913: 144. Type-locality: Darjeeling, India. Holotype ♂ (ZSIC).

Euleia (Acidiostigma) apicalis: Munro 1935: 22 (records of 2 specimens from Darjiling, India).

Acidiostigma apicalis: Hardy 1977: 103 (in Oriental catalog); Kapoor *et al.* 1980: 49 (distribution);

Wang 1990b: 315 (in Chinese key); Kapoor 1993: 98 (in Indian list).

Remarks. This species might be a sister species of *A. longipennis*. According to the original description, *A. apicalis* has wing pattern very similar to *A. longipennis*, but can be distinguished by a pair of short dark brown anterior submesal spots on the scutum and two large black spots on the mediotergite.

2. *Acidiostigma harmandi* (Séguy), *comb. nov.*

Parahypenidium harmandi Séguy 1934: 9. Type-locality: Darjeeling, India. Holotype ♂ (MNHP).

Remarks. According to the original description, *A. harmandi* is almost identical to *A. lucens* (see "remarks" of *A. lucens*). *A. harmandi* also closely resembles *A. cheni* and *A. nigrutum*, but can be distinguished by its more extensive dark area on the scutum; dark scutal bands are diffused each other, while six bands are clearly discernible in the other two species (Figs 7A, 10A). Wing pattern of *A. harmandi* is also similar to these species, but two hyaline area on the cell r4+5 are larger, almost touching the vein R4+5.

3. *Acidiostigma lucens* (Munro)

Euleia (Acidiostigma) lucens Munro 1935: 22. Type-locality: Darjeeling, India. Holotype ♀ (ZSIC).

Acidiostigma lucens: Hardy 1977: 103 (in Oriental catalog); Kapoor *et al.* 1980: 49 (distribution); Wang 1990b: 315 (in Chinese key); Kapoor 1993: 98 (in Indian list).

Remarks. From the original descriptions, we do not find any significant difference between the type female of *A. lucens* and the type male of *A. harmandi* except for the usual intraspecific sexual dimorphism of the subcostal cell length found in *Acidiostigma* spp. When the types of both species are

compared in detail, they may turn out to be conspecific.

4. *Acidiostigma sonani* (Shiraki), **comb. nov.**

Acidia (*Pseudacidia*) *sonani* Shiraki 1933: 226. Type-locality: Taiwan. Holotype ♀ (NTUC).

Acidiella (*Pseudacidia*) *sonani*; Chen 1948: 77 (in Chinese list).

Pseudacidia sonani; Hardy 1977: 114 (in Oriental Catalog).

Remarks. See "Remarks" of *A. yoshinoi*.

5. *Acidiostigma yoshinoi* (Shiraki), **comb. nov.**

Acidia (*Pseudacidia*) *yoshinoi* Shiraki 1933: 225. Type-locality: Taiwan. Holotype ♂ (NTUC).

Acidiella (*Pseudacidia*) *yoshinoi*; Chen 1948: 77 (in Chinese list).

Pseudacidia yoshinoi; Hardy 1977: 114 (in Oriental Catalog).

Remarks. Shiraki (1933) indicated that this species was closely related to *A. s-nigrum* (as *Pseudacidia takeuchii*). According to the original description, this species closely resembles *A. s-nigrum*, except for not having dark anterior submesal spots (AS) on the scutum and less extensive wing patterns. He also indicated that the holotype female of *A. sonani* resembled the holotype male of *A. yoshinoi*, but could be distinguished by less extensive wing pattern and more proximal position of the crossvein rm-cu. As in the closely related species *A. s-nigrum*, whose females have less extensive wing pattern, the holotype of *A. sonani* may simply be a female of *A. yoshinoi*. The difference in the position of rm-cu falls in normal range of intraspecific variation often observed in the *Trypeta* group taxa.

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중국, 한국, 일본産 *Acidiostigma*屬 (파리目, 과실파리科)의 분류학적 재검토

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과실파리과의 *Acidiostigma*속을 분류학적으로 재검토하였으며 *Parahypenidium*과 *Shiracidia*속을 *Acidiostigma*의 동물이명으로 정리함으로써 속의 명명상 위치를 명확히 정의할 수 있었다. 총 16 Old World종을 확인하였으나 대만과 인도에 소장되어 있는 모식표본을 확인하지 못한 관계로 재검토의 범위를 중국, 한국, 일본으로 국한하여 수행하였다. 결과적으로 3종의 신종을 포함하는 총 11종의 검색표, 기재문, 삽화 등을 포함시켰으며, 다른 지역에 서식하는 5종에 관해서는 checklist와 분류학적인 부연설명을 실었다. *Acidiostigma*속이 참과실파리족(tribe Trypetini)에서 차지하는 분류학적 위치와 속내의 중간 관계는 분지학적인 방법론을 사용하여 추정하였다.

검색어 : 파리목, 과실파리과, 참과실파리족, 계통분류

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